Address
ON THE
GROWTH OF OUR KNOWLEDGE OF THE FUNCTION OF SECRETION.

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THE INVESTIGATIONS AND THEORIES OF BOWMAN.

At the time when Goodsir was engaged in his investigations and speculations relating to cells, Mr. Bowman was making researches which were to give him a lasting place among the great histologists of the century.

His investigation on the structure of the kidney,[1] which was published in the "Philosophical Transactions" for the year 1842, surpassed in completeness as an anatomical study, no less than by the deep insight into the nature of the function discharged by the organ, any investigation of like kind which had preceded it. It not only led to a more complete knowledge of the structure of the kidney than was possessed of that of any other gland, but to far-seeing generalisations concerning the structure of mucous membranes, and of secreting organs generally, which found expression in a masterly article on mucous membranes, published in the year 1847, in the "Cyclopædia of Anatomy and Physiology."

Time will not permit of my giving a complete analysis of the (to use a German expression) epoch-making research upon the kidney; but let me remind you that it led to a complete understanding of the relations of the Malpighian bodies to the urinary tubules; to a description which, so far as it went, was perfectly accurate of the tubules themselves, though the scheme upon which these tubes are arranged has, since Bowman's time, thanks to the labours of Henle, Ludwig, and Schweigger-Seidel, been proved to be more complicated than he had imagined, and to a knowledge of the distribution of bloodvessels, not only in the kidney of man and other mammalia, but also in that of certain reptiles.

His study of the structure of the tubuli uriniferi had led Mr. Bowman to discover that in these a layer of epithelial cells lies upon a structureless membrane, to which he gave the name of the basement membrane,[2] and which intervenes between the epithelium and the blood capillaries, whence the materials of secretion are primarily derived. His examination of the mucous membranes of the body led Bowman to the conclusion that the relationship so easily observed in the case of the kidney between cells, basement membrane, and bloodvessels, is one which holds true, not only in the case of that organ, but in that of many other epitheliated structures.

"In the mucous tissue," said Mr. Bowman,[3] "there are two structures which require to be separately described—viz., the basement membrane and the epithelium. The basement membrane is a simple homogeneous expansion, transparent, colourless, and of extreme tenuity, situated on its parenchymal surface and giving it shape and strength. This serves as a foundation on which the epithelium rests. The epithelium is a pavement composed of nucleated particles adhering together, and of various size, form, and number. The following general observations on these elementary parts will receive illustration as we advance. Neither the one nor the other is peculiar to the mucous tissue in the sense either of being invariably present in it, or of not being found elsewhere. There are certain situations of the mucous system where no basement membrane can be detected, and others from which the epithelium is absent. Both, however, are never absent together. Again, a structure apparently identical with the basement membrane is met with in numerous textures besides the mucous, and all internal cavities, whether serous, synovial, or vascular, or of anomalous kind (as those of the thymus and thyroid body), are lined by an epithelium."

As a result of his anatomical studies on the kidney, Mr. Bowman was led to frame a theory of renal secretion which, though opposed for a time by a master mind, has, by the progress of research, received complete confirmation, and which was based in no small degree upon the new views of the function of epithelial cells in glands. The Malpighian body, Bowman showed, is the dilated commencement of a convoluted tubule, and, like it, presents a delicate, structureless, basement membrane. Into the Malpighian body projects a tuft of capillary vessels, continuous, on the one hand, with an afferent vessel derived from a branch of the renal artery, on the other, with an efferent vessel of smaller size than the afferent; both afferent and efferent vessels piercing the capsule of the Malpighian body; after leaving the glomerulus, the efferent vessel breaks up into a series of capillaries, which are distributed to the walls of the convoluted tubes. The tuft of bloodvessels projecting into the Malpighian body, Bowman described as being perfectly bare, that is to say, not covered by a basement membrane, or by a layer of epithelium cells. This part of his description has not been confirmed by recent work, the more delicate methods of modern histology allowing of a ready demonstration of a layer of cells of extreme tenuity covering the glomerulus.

The basement membrane of the convoluted tube was described as lined by a nucleated epithelium of a finely granular opaque aspect; the neck of the tube, where it joins the Malpighian capsule, and the contiguous portions of the capsule were described as covered by a layer of cells, differing altogether from the first, being much more transparent, and possessing in certain animals vibratile cilia. In some cases the whole interior of the capsule was lined by epithelium cells of great delicacy and tenuity; in others, these cells could not be traced over more than a third of the capsule. Basing himself upon the altogether exceptional arrangement of the bloodvessels of the glomerulus, Bowman advanced the theory that this is a structure destined to separate from the blood its watery portion. The epithelium of the convoluted tubes, on the other hand, which Bowman pointed out to be "eminently allied to the best marked examples of glandular epithelium," he believed to be concerned in the separation of the characteristic solid matters of the renal secretion.

I shall for the present conclude my remarks upon Mr. Bowman's investigations and theoretical views by stating that, by his investigations of the blood-supply to the kidney of the boa constrictor, he gave the strongest proof which could be derived from anatomical evidence of the correctness of his views, and furnished great part of the knowledge required for the subsequent researches which Nussbaum made on the secretion of the newt's kidney, and which afforded the most conclusive experimental evidence in favour of the theory which Bowman had advanced.

THE DISCOVERIES OF CARL LUDWIG.

If to Johannes Müller we must ascribe the greatest share of merit as a discoverer of the general affinities relationships, and functions of glands, it appears unquestionable that to Carl Ludwig belongs the credit of having, above all others, brought the light of experimental physiology to bear upon the subject of secretion.

Ludwig is one of the most eminent of the physiologists who have endeavoured, as far as possible, to apply the conceptions derived from a study of physical and chemical processes in general, to the elucidation of the functions of the organism. More than anyone else has he successfully adapted the methods of research of the chemist and of the physicist to the investigation of the problems which lay before him. Above all others he is to be spoken of as the great teacher amongst all of the great teachers of physiology which this century has produced. If we try to find one who, from the fertility of his mind and the influence which he had upon men of ability, affected the progress of his science, in like manner to Ludwig, we revert to the name of Liebig, and when I say that physiology owes as much to Ludwig as chemistry to Liebig, I shall, I feel sure, be doing but scant justice to the great man who at Marburg, at Vienna, and at Leipzig has won for himself the right to be called at once the greatest physiologist and the greatest teacher of physiology of his time.

1. *Ludwig's Discovery of Secreting Nerves.*—It was in the year 1851 that Ludwig first announced to the scientific

[1] W. Bowman, On the Structure and Use of the Malpighian Bodies of the Kidney, with Observations on the Circulation through that Gland, Philosophical Transactions for the year 1842, Part I., p. 57.
[2] Op. cit., p. 58.
[3] Article Mucous Membrane, in Todd's Cyclopædia, p 496.

world[4] the fact that the secretion of the salivary glands is under the influence of the nervous system. C. G. Mitscherlich, as Ludwig points out, had surmised that the secretion of saliva only occurs as the result of a stimulation of certain nerves—i.e., the nerves of taste and the nerves supplying the muscles of mastication. No attempt had, however, been made, before Ludwig's, to ascertain experimentally whether the stimulation of nerves supplying glands influenced directly their secretion. As a subject of study Ludwig chose the submaxillary gland. He found that on stimulating by a succession of induction shocks the nerve twigs proceeding from the lingual branch of the fifth nerve, which accompany Wharton's duct to the gland, secretion of saliva occurred so long as the excitability of the nerves persisted.

In experiments performed in conjunction with his pupil Rahn, Ludwig found that secretion occurs on direct stimulation of the glandular nerves, even when the circulation has been arrested for a time, as, for instance, when the contractions of the heart are inhibited for some time.

2. *Ludwig's Discovery that Secretion is not a Process directly dependent upon the Arterial Pressure.*—In the paper which I have already quoted, Ludwig published the results of the following experiments. A mercurial gauge was placed in communication with the duct of the submaxillary gland, the height of the mercury in the gauge being recorded (by means of a float to which was attached a writing point) upon the travelling surface of the kymographion, the instrument which Ludwig had contrived for permanently recording the amount and variations of the blood pressure in arteries and veins. At the same time, another gauge placed in communication with the carotid artery, or one of its branches in close proximity to the gland, recorded the height of the blood pressure on the same travelling surface. On stimulating the secretory nerves, Ludwig found that saliva was poured out long after the pressure exerted by it upon the interior of the gland (as measured by the height to which the mercury was raised in the gland-duct manometer) exceeded the pressure of blood in the arteries. Thus, in his first recorded experiment, the mean pressure of blood in the carotid artery amounted to 108·5 millimetres of mercury, whilst during a stimulation of the nerve filaments going to the gland, the pressure in the gland-duct manometer rose to between 190·7 and 196·5 millimetres—i.e., indicated that the pressure exerted by the fluid, secreted under the influence of nerve stimulation, exceeded the arterial pressure by an amount corresponding to a column of mercury about three and a half inches high. It is obvious that the experiment at once and conclusively proved that the secretion of a watery liquid like the saliva may be brought about by a process altogether different from a process of filtration; for in filtration the passage of liquid through the minute pores of the filter necessarily depends upon a difference in pressure on the two sides of the filter, the movement of liquid being from the side of greater to that of lesser pressure.

In this brief sketch I have only time to refer to the most salient of the early discoveries of Ludwig on secretion, and must pass over without comment the first experiments by which he showed the influence exerted by variations in the strength of the stimulus of a secretory nerve upon the amount and chemical composition of the secreted liquid.

3. *Ludwig's Discovery that during Secretion Heat is evolved in Glands.*—Pursuing his researches on the salivary glands, Ludwig some years later,[5] in conjunction with his pupil Spiessi, discovered that when a gland is thrown into action by stimulation of its nerves, heat is evolved. In the case of the submaxillary gland, for instance, he found that the saliva which was secreted might have a temperature nearly three degrees Fahr. (1·5° C.) above that of the blood going to the gland. Important as was this result because of the light which it threw upon the source of animal heat, its value as bearing upon the nature of the process of secretion was even greater. From the fact that the saliva is a liquid containing but three or four or five parts of solid matters to one thousand of water, it would scarcely have been surmised, upon a merely physical hypothesis, that its production would have been attended by any considerable evolution of heat. The evolution of heat is indeed one of the strongest proofs we have that the act of secretion is the result of the living activity of those ultimate units of the glands, the gland cells; but to this I shall revert hereafter.

[4] Ludwig, Neue Versuche über die Betheiligung der Nerven zur Speichelabsonderung, Henle and Pfeifer's Zeitschrift, New Series, vol. i. 1851, p. 255.

[5] Ludwig u. Spiess, Sitzungsber. d. Wiener Akad., Mathem. u. Naturwissenchaft. Classe, vol. xxv. (1857), p. 543.

THE RESEARCHES OF SCHIFF, ECKHARDT, AND CLAUDE BERNARD, ON THE SECRETORY NERVES OF THE SALIVARY GLANDS.

The study of the innervation of the salivary glands which had been commenced by Ludwig and Rahn was continued with great success by other observers, and particularly by Claude Bernard and Eckhardt. The first of these observers proved the correctness of Schiff's supposition that the abundant secretion which followed the stimulation of fibres of the fifth cranial nerve was in reality due to the presence of fibres of the chorda tympani mixed with them. It was Eckhardt, however, and afterwards Claude Bernard, who established the remarkable fact that, in the case of the submaxillary gland, and, as has since been shown, of some other glands also, the gland is under the direct control of two orders of nerve fibres. The first are contained in branches of cranial nerves, and in the case of the submaxillary gland are derived from the facial nerve, and, when stimulated, lead to an abundant secretion of watery saliva, relatively rich in saline and poor in organic constituents; the second are contained in the so-called sympathetic nerve trunks distributed to the gland; and these, when stimulated, occasion an exceedingly scanty flow of very concentrated and highly viscid saliva, containing a relatively large quantity of organic constituents, particularly of mucin.

Claude Bernard now pointed out that stimulation of the above-mentioned nerves leads to changes in the circulation of blood through the gland, in addition to the changes in the amount and quality of the fluid secreted by it.

Thus stimulation of the cerebral fibres supplying the chorda tympani was found to produce a great dilatation of the arteries of the gland; so that the amount of blood passing through it was very largely increased, that passing out through the venous trunks of the gland presenting a florid arterial colour instead of the brown venous hue observed when the gland was not secreting. Stimulation of the sympathetic fibres, on the other hand, caused a great contraction of the glandular arteries, consequently a diminution of the flow of blood through the gland and into the veins, the blood presenting under these circumstances an intensely venous hue.

The facts just referred to appeared reconcilable at first with the view that the secretion of saliva, as a result of nerve stimulation, was primarily dependent upon changes in the circulation of blood through the gland; though, upon reflection, the surmise was negatived by some of the facts discovered long before by Ludwig, and particularly by that, already referred to, of glandular secretion following stimulation of glandular nerves, even where the circulation has been stopped, as by cardiac inhibition.

Bernard's experiments had unquestionably established that in addition to nerves which, when stimulated, occasioned the contraction of arteries—"the vaso-motor," or, as we now sometimes call them, the "vaso-constrictor" nerves—there are others which when stimulated occasion, on the contrary, the dilatation of arteries—the so-called "vaso-inhibitory" or "vaso-dilator" nerves. That it was not stimulation of the vaso-dilator nerves, which, by increasing the amount and the pressure of the blood flowing through the capillaries, occasioned the secretion of saliva, was shown by several experiments, but especially by an observation of Kenchel. This observer found that the alkaloid of the deadly nightshade—viz., atropia,—when introduced into the system, exerts such an action, that on stimulating the chorda tympani no secretion of saliva follows; whilst, on the other hand, dilatation of the arteries is produced exactly as under normal circumstances. Other drugs have since been discovered which exert a similar action to that of atropia in paralysing secretory nerves, whilst some are now known which antagonise the action of atropia, and restore the suspended activity of the secretory nerves. From these studies has unquestionably resulted a knowledge of the conclusion that, although the process of secretion is favourably influenced by the vascular dilatation which follows the state of activity of the vaso-dilator nerves, the actual process of secretion is not due to them, but, so far as it is controlled by the nervous system, is directly under the influence of certain nerves which may be termed secretory.

DISCOVERIES WHICH SHOW THAT SECRETION, THOUGH INFLUENCED BY, IS NOT NECESSARILY DEPENDENT UPON, STIMULATION OF NERVES GOING TO A GLAND.

A knowledge of the facts which I have brought before you hitherto would of itself lead you to suppose that glandular secretion is a process which is in abeyance except under the influence of stimulation of nerves which throw the gland into activity, in the same manner as the quiescent muscle passes into activity normally, only when its motor nerves are stimulated. But this supposition, though it may be in some measure true in the case of certain glands, is not borne out by a study of secreting glands in general—a study which teaches us that whilst the activity of the gland cells may be, and often is, remarkably under the control of the nervous system, it is by no means necessarily dependent upon it. The activity of the gland depends upon the activity of its individual units, the gland cells; and these units may discharge their function so long as they continue to live and are supplied with the nutriment, mineral, organic, and gaseous, which they require.

Leaving aside, at least for the present, any reference to the arguments which may be derived by analogy from a study of cell life in general, I would call your attention to the physiological facts which prove the truth of the proposition just enunciated. The first of these facts was discovered by Claude Bernard—to wit, that when all the nerves supplying the salivary glands are divided, there is at first a temporary cessation of secretion, soon followed, however, by an abundant flow of very watery, so-called paralytic saliva.

This result is fully confirmed by similar observations made in the case of other secreting organs, and which establish very fully the greater or less independence of the secreting elements from the control of the nervous system; though unquestionably, in a normal state of the organism of higher animals, the nervous system is continually intervening, both directly by its influence on gland cells, and indirectly by the changes which it produces in the circulation, so as to control the operations of gland cells, and especially to bring them into relation with, and subordinate them to, the work of complex processes of the organism.

What the exact relations of nerve fibres to gland cells may be is yet a matter involved in great doubt. The discovery made by Pflüger of the terminations of nerve fibres in the secreting cells of the salivary glands has not been confirmed by any observer in any vertebrate. Kupffer has, however, unquestionably done so in the case of *Blatta orientalis*, and although as yet objective proof is wanting, we cannot entertain any reasonable doubts that a connexion between the ultimate fibrillæ of nerves and secreting cells actually exists.

THE IMMEDIATE SOURCE OF THE NUTRIMENT CONSUMED BY THE GLAND CELL.

In the original scheme of a secreting gland, developed first of all by Bowman, then adopted by Goodsir, Carpenter,[6] and many other writers, the essential structural elements taken into account were the following:—(1) Epithelial cells lining the secreting cavity of the gland; (2) subepithelial tissue, usually presenting superficially the form of a basement membrane, upon which the cells were placed; and (3) a capillary network in closer relation to the basement membrane, or more superficial part of the subepithelial tissue. In harmony with this scheme, the glandular elements were always spoken of as drawing their supply from the blood in the capillaries. The one element which was wanting in that scheme, and which we are able to fit into it, thanks again to the labours of the great physiologist of Leipzig, is the relation of so-called lymph spaces to the other elements. As was first shown by the researches of Ludwig and his school, amongst the modes of origin of the peripheral lymphatics, the most numerous are to be found in connective tissue, and nowhere more abundantly than in the connective tissue of glands, which is everywhere interpenetrated by irregular spaces containing lymph, whence spring the minutest lymphatics. If we consider, then, the immediate environment of the secreting cell, we find that in close proximity to it is the lymph, which is a transudation from the blood, and upon which the gland cells are directly dependent for all the matters which they require. For a certain time, then, the gland cell will be independent of the supply of blood—that is so long as the lymph surrounding it contains a sufficient quantity of essential matters, of which oxygen is one of the chief, to support its life, or until it becomes so charged with waste products derived from cell-life—e.g., CO_2, as to interfere with the functions of the latter. It certainly appears that, at least in the majority of cases, it is the secreting cell which modifies, in the first instance, the composition of the lymph which bathes the tissues in proximity to it, rather than the composition of the lymph which modifies the activity of the gland cell. There are some cases, nevertheless, in which it would appear that the presence of certain constituents in the lymph is the direct cause of the activity or increased activity of the cells.

[6] Carpenter, in his admirable article on Secretion in Todd's Cyclopædia

SECRETING CELLS PRESENT DIFFERENT APPEARANCES, CORRESPONDING TO DIFFERENT STATES OF FUNCTIONAL ACTIVITY.—THE RESEARCHES OF HEIDENHAIN.

Amongst the physiologists of Europe who have most enriched science by their researches during the last thirty years is unquestionably Professor Heidenhain of Breslau, who has exhibited his mastery of the physical side of physiology by his classical research on the relations between the heat evolved in and the work done by muscle, and as a biologist able to use in the best manner all the resources of modern histology in the elucidation of bodily function, by the researches to which I wish now to direct your attention.

The glands imbedded in, or the ducts of which open upon the surface of the mucous membrane of, the alimentary canal, for the most part are characterised by periods of more or less complete cessation of activity, as judged by the diminution, or absolute cessation, of the secretion which they prepare. This is true of the salivary glands and of the liver, but particularly true of the gastric glands and the pancreas.

Certain of these glands—i.e., the salivary glands in some animals, and the stomach and pancreas in all in which they exist—have the task of preparing juices which contain certain so-called unformed or unorganised ferments or "enzymes," upon which the properties of the secretions in great measure depend. Heidenhain in a long series of investigations, which have been taken part in by certain other scientific men, as by Ebstein and Grützner, by Kühne and Lea, and particularly by Mr. Langley of Trinity College, Cambridge, has shown that the secreting cells of a particular gland, as for instance of the submaxillary gland, of the gastric glands, and of the pancreas, exhibit differences in size, differences in the form and appearance of the nucleus, and differences in the cell contents, corresponding to varied states of functional activity.

Time will not permit my mentioning in detail the results of these observations, from which, however, certain general conclusions appear derivable. Thus, a gland cell at rest is usually larger than a similar cell which has been engaged in the process of secretion; from its behaviour to reagents, it usually appears to contain within itself an abundant store of the body or bodies which are chiefly characteristic of the secretion, or closely related antecedents of these, and the amount of undifferentiated protoplasm surrounding the nucleus appears to be at a minimum. On the other hand, the gland cells, which have been secreting for a greater or less period, often, though not invariably, present a diminution in their size, a diminution in the amount of the characteristic bodies previously referred to, and an increase in the protoplasmic constituents of the cell. All facts, histological as well as physiological, seem to point to the following conclusion: that during rest, the cell forms, at the expense of, or as the product of the differentiation of, the cell protoplasm, the bodies characteristic of the secretion; that whilst secretion is going on these leave the gland cell; and that, at the same time, the protoplasmic constituents of the latter increase at the expense of the lymph, to be converted secondarily, either at a later period in that particular act of secretion, or in the succeeding period of inactivity, into specific constituents. The researches of Heidenhain have been conducted upon the glands after these had undergone processes of hardening and staining, the appearances observed indicating changes which though not identical with, at least corresponded to various conditions of the gland. Kühne and Lea and Langley have, however, studied glands in a living condition, and though the appearances were not identical with those observed by Heidenhain, they entirely confirm these.

I have not time to do more than refer to the fact that in some at least, though probably in all of the cells of glands which produce secretions containing ferments, there are formed at first bodies to which the generic term of

"zymogens" may be applied — i. e., *ferment generators*, from which a ferment is afterwards set free.

In connexion with this part of my subject I may refer to the view, which was at one time held by some, that in secreting glands the gland cell having produced the matter of the secretion was thrown off, discharging its contents into the secretion. This process, when it does occur, must be looked upon as exceptional, and as it were accidental.

Amongst the most striking examples of the success with which physiological experiment and subsequent histological research have been pursued in combination so as to throw light upon the functions of particular cells, I may refer first to the observations of Heidenhain, secondly to those of Nussbaum on the excretion of colouring matters, artificially introduced into the blood, by the secreting epithelial cells of the renal tubules. I have previously referred to the theory of Bowman, according to which the watery and saline constituents of the renal secretion were supposed to be separated by the so-called "glomeruli," whilst the organic solids of the secretion were supposed to be separated by the epithelium lining the convoluted tubes.

To this theory was opposed that of Ludwig, according to which the whole of the constituents, watery, saline, and organic, were supposed to be poured out of the vessels of the glomerulus, the amount of water, however, being far in excess of that contained in the liquids when it reaches the pelvis of the kidney. Ludwig supposed that as the secretion passed over the surface of the epithelium lining the complex tubules, processes of diffusion occurred between it, on the one hand, and the lymph bathing the tissues lying outside of the basement membrane of the tubules on the other, the direction of the current of water being from without inwards. The anatomical evidence adduced by Bowman was of itself well-nigh sufficient to prove the accuracy of his views, which have however been placed beyond all dispute by the following observations: Heidenhain introduced into the blood a solution of sulphindigotate of sodium, usually some time after having divided the spinal cord in the cervical region. On killing the animal some time afterwards and subjecting the kidney to careful examination, it was found that the colouring matter had been accumulated by the epithelium of the convoluted tubules from the lymph bathing the tissues, and which contained so little colouring matter as to appear colourless. If a sufficient time had elapsed after the injection, the colouring matter was found in the form of granules or minute crystals lying on the inner side of the cell in the lumen of the tubules.

Bowman, as I have already mentioned, had in the case of the boa constrictor studied in detail the blood-supply to the organ, which, as Jacobson had shown, differs in fishes, birds, and reptiles, from the mode of arrangement prevailing in mammals. Bowman had shown that in the boa the glomeruli derived their blood exclusively from the renal artery, and the convoluted tubes exclusively from the common iliac vein. Nussbaum gave absolute completeness to the proof of Bowman's theory by the following remarkable experiment. Experimenting on the newt, in which the blood-supply of the kidney is similar to that of the boa, he found that, when he tied the renal artery, he arrested almost entirely the secretion of water in the kidney, but that the excretion of urea and other solid matters, and amongst others of the colouring matter already used by Heidenhain—viz., indigo, carmine—continued. Ligature of the renal branches of the common iliac vein stopped the secretion of organic solids without impeding that of water.

THE MOST RECENT THEORIES ADVANCED IN EXPLANATION OF THE PHENOMENA OF GLANDULAR SECRETION.

Having brought before you the most salient facts with which we are acquainted which appear to throw the most light upon the general physiology of glandular secretion, I wish to speak of the theoretical views which have been advanced in explanation of a large number of the facts.

In the first place, I have to confess that our ignorance is absolute as to the cause of the specific endowment of different secreting cells, in virtue of which they produce new bodies at the expense of certain of the materials supplied to them by the lymph, or separate particular constituents from the lymph, to the exclusion of others which are equally abundant in the liquid. We express the full measure of our ignorance when we state that the difference in function of different gland cells is due to differences in endowment of the protoplasm of the cell, which in no case is explained by any objective characters of the cell.

The phenomena of the secretion of water, which forms so large a part of every secretion, have given rise, however, to numerous speculations. The primitive view that the glands are organs in which is strained off from the blood water holding certain substances in solution is held, in a modified manner, by some even now, and appears, indeed, at first sight, to be borne out by certain facts. Thus within wide limits the amount of water secreted by the kidney depends upon the pressure of blood in the glomeruli. Any circumstances which will lead to an increase of pressure in these vessels (as increase of blood-pressure generally, division of renal nerves, division of the splanchnics, especially when combined with stimulation of the spinal cord), by dilating the branches of the renal artery, will lead to this result. At first this would seem to show that the process of separation of water, in the kidney at least, is but a process of filtration, though a remembrance of the famous experiment of Ludwig, referred to at an earlier period, on the relation between the pressure of secretion of saliva and that of the blood in the arteries, would impose caution in drawing the conclusion. What are the facts, then, relating to the blood pressure in vessels in other organs of the body, and the transudation of liquid from them?

If an increased arterial pressure led *ipso facto* to an increased transudation through the capillary walls, it would follow that the amount of lymph and the pressure of the lymph stream would rise with the rise of the arterial pressure, but direct experiments on this matter have led to an opposite conclusion. The experiments of Paschutin and Emminghaus, carried out under Ludwig's direction, have shown that when the arterial pressure in the extremities is increased, there is no corresponding increase in the lymph produced. Again, when the chorda tympani is stimulated in an animal into whose blood atropia has been introduced, the vascular dilatation which is produced, and which is then unaccompanied by secretion, does not lead to an increased production of lymph, which would make itself evident by the gland becoming œdematous. How, then, are we to account for the flow of water through a gland? By ascribing it to an influence which is exerted by the gland cell, in the first place, upon the liquid which environs it—viz., the lymph. And accordingly, even in the case of the glomeruli of the kidney, we conclude that the water is separated as a direct result of the activity of the layer of transparent epithelium cells which cover them. Hering has advanced a strictly physical theory, which would account for the mode in which certain cells exert this influence, by supposing that there is produced within them bodies which, like mucin, have a great affinity for water, and which then pass into the secretion; and which therefore lead to a current of water passing through the cell; but the theory is one which cannot be admitted, because, as Heidenhain points out, the passage of water through a gland occurs in cases where there is no constituent in the cells at all resembling mucin in its affinities or behaviour towards water. I feel inclined to say that the speculations, necessarily indefinite though they are, of Heidenhain afford the best explanation of the phenomena. Heidenhain starts from the fundamental fact that during secretion only as much water passes out of the bloodvessels of the gland as appears in its secretion, seeing that, however long the process of secretion may continue, the gland never becomes œdematous, nor does the current of lymph from it increase.

The volume of liquid filtered through the blood capillaries adjusts itself exactly to the volume of liquid separated by the cells. This equality in the amount of liquid secreted and filtered appears only explicable on the supposition that the act of secretion is the cause of the current of water—in other words, that the water which the cells lose in the formation of the secretion generates changes in them which can only be compensated for by an abstraction of water from the immediate environment.

Within certain limits, Heidenhain continues, we may form purely physical conceptions of the process. We may conceive, for instance, the whole protoplasm of the cell to have a certain affinity for water. The cells at their contact with the basement membrane may be supposed to be able to abstract water from it; the loss which the membrane sustains will be made up by the lymph, and this again will influence the blood in the capillaries.

The passage of water into the cells will go on until a period of equilibrium is attained; but at that time the current of water from the capillaries through the lymph to the cells will cease. We may conceive further, reasons Heidenhain,

that the passage of water out of the cell is hindered by such obstacles to the process of filtration as are represented by resistance opposed to it by the superficial border layer of protoplasm. If we now conceive that, for example, as a result of nerve stimulation, the gland cells pour out water, the condition of equilibrium which existed between cell, basement membrane, lymph, and capillary will be disturbed, and a current of liquid set in from the last to the first, and continue as long as the activity of the cells continues.

It is not difficult, moreover, Heidenhain remarks, to form physical conceptions of the processes whereby water may be separated from the cell itself. It is conceivable, for instance, that the protoplasm of the cell may contract after the manner which occurs in many infusoria, and which in them leads to the accumulation of water in droplets, forming vacuoles, except that in the case of the secreting cells the water is poured out on the outside, and not on the inside, of the cells. Or, again, it is possible that on the gland cell passing into the condition of activity an increased production of CO_2 may occur, leading to an increased diffusion of water outwards.

So far, I have quoted Professor Heidenhain, for the most part, in his own words. Let me add, however, that the two hypotheses which he advances as possible explanations of the mechanism of secretion of water by the cell rest upon the most probable grounds, as upon the presence of the intracellular protoplasmic network which has been so beautifully demonstrated by recent researches, and especially by those of Professor Klein; or, again, upon the fact, proved by the analyses of Professor Pflüger of the gases of the saliva, that there is during secretion great production of CO_2, as shown by the amount of this gas in the saliva being much greater than in the blood, and upon the fact of the remarkable diffusibility of acid solutions.

Reasoning upon a large number of facts, which I have not time to refer to, Professor Heidenhain has come to the conclusion that, quite apart from the nerves which control the vascular supply to a gland, there exist two distinct sets of nerve-fibres in relation to the glandular elements. The first of these, which he terms "secretory," when stimulated lead to the secretion of water and saline constituents; the second, which he terms "trophic," influence the transformations of the protoplasm of the cell, and thus affect the organic constituents of the secretion.

I do not wish to pronounce a definite opinion concerning this hypothesis, but would remark that the nomenclature proposed by Heidenhain appears to me to be an unfortunate one, especially because it attaches a new meaning to a word which had previously been used by physiologists in a different sense. I refer to the adjective *trophic*, which has always implied "governing nutrition." It appears to me almost inconceivable that if there exist two sets of secretory nerves, the action of each should not profoundly affect the nutrition of the cell protoplasm, though, of course, it is conceivable that they should do so in very different manners.

GENERAL CONCLUSIONS.

The complicated studies, of which I have atttempted to give you a brief sketch, have led to our forming certain clear general conceptions in reference to the process of secretion. They have brought into greater prominence the dignity, if I may use the expression, of the individual cell. The process of secretion appears as the result of the combined work of a large number of these units. Each, after the manner of an independent organism, uses oxygen, forms CO_2, evolves heat, and derives its nutriment from the medium in which it lives, and performs chemical operations of which the results only are imperfectly known to us, and which depend upon peculiar endowments of the cell protoplasm, of which the causes are hidden from us. So long as the protoplasm is living, the gland cell retains its power of discharging its functions, and in many cases does so, so long as the intercellular liquid furnishes it with the materials required. In some cases, however, the gland cells are specially sensitive to a variation in the composition of the nutrient liquid, certain constituents of which appear to stimulate the protoplasm to increased activity. In the higher animals the cells, particularly in certain glands, are in relation to nerves which, when stimulated, affect in a remarkable manner the transformations of their protoplasm, leading to an increased consumption of oxygen, an increased production of carbonic acid, an increased evolution of heat, and an increased production of those matters which the cell eliminates and which constitute its secretion.

This historical survey of the growth of our knowledge of the process of secretion exhibits the characteristic features of biological advancement. Comparative anatomy has been the foundation of, observation of facts and physical experiment, the road to physiological research. At various stages the value of hypotheses has been well illustrated, and whenever they have had to make way for the broader and truer interpretations suggested by the accumulation of facts and greater precision of observation, it has been demonstrated that the process of observation is not one of simple sight, but of complex ratiocination.

ABSTRACT OF A

Lecture

ON

OIL OF EUCALYPTUS IN MIDWIFERY PRACTICE.

Delivered at the Glasgow Maternity Hospital, July 3rd, 1882,

BY SAMUEL SLOAN, M.D., F.F.P.S.G.,

OBSTETRIC PHYSICIAN AND LECTURER ON CLINICAL OBSTETRICS AT THE HOSPITAL.

[AFTER some remarks on the nature of "puerperal fever," the symptoms of a typical case of acute puerperal septicæmia were given, and also of a case of puerperal pyæmia; and the relationship of these diseases to surgical fever was shown. These being diseases associated with putrefaction, the importance of thorough cleanliness during labour and throughout the puerperal condition was insisted upon. The following were noticed as amongst the predisposing causes of septicæmic poisoning: 1. The readiness with which the lochial discharge decomposes. 2. The natural condition of the generative tract after parturition. 3. The various lacerations—perineal, vaginal, and cervical—either at the os or in the cavity. 4. The intense prostration of the nervous system, so marked in many of the single women in maternity hospital practice—so great as sometimes to amount to mental collapse: this condition vastly increasing the tendency to absorption of the discharges. The dangers of infection were also dwelt on.]

To wait for the appearance of symptoms of mischief is sometimes a fatal mistake, as the system may be overpowered by the disease before there is any warning of danger. It is therefore of the utmost importance in the employment of antiseptics in midwifery practice to use them from the very first, since the blood may be poisoned within twenty-four hours after the completion of labour. The advantage of retaining for several days after parturition an efficient contraction of the uterus is obvious, and for this purpose I give, as a matter of routine, a mixture like the following, which I find also very serviceable as a preventive of after-pains:—Solution of muriate of morphia, one drachm and a half; tincture of nux vomica, half a drachm; liquid extract of ergot, two drachms; tincture of orange, three drachms; water to two ounces. One drachm in a little water every four or six hours. That injections of water mixed either with carbolic acid or Condy's fluid are valuable cannot be denied; that in cases of excessively fetid lochia, with general febrile disturbance, they may act like a charm I have often found. These latter are cases, however, in which the blood seems to be charged with only the chemical products of decomposition; and it must be admitted that in cases of genuine septicæmia the employment of injections is often of no avail. Of course, if used from the first day, they will go far towards preventing or diminishing septic mischief. They are, however, irksome to the patient, whilst in the hands of an unskilful nurse they may be a positive danger.

That a midwifery case cannot be conducted throughout on absolutely antiseptic principles will be readily admitted by those of you who are familiar with antisepticism as carried out in surgical practice. We should, however, endeavour to come as near to this standard as is possible to us as obstetricians. That vaginal or even uterine injections of

antiseptic fluid every few hours come near to complete antisepticism is absurd. In order to act efficiently on the lochial discharge we ought to attack it with the antiseptic as it pours from the os uteri, and to keep up this action continuously. What antiseptic will best suit for this purpose? Carbolic acid, which has proved so great a gain to the surgeon and in a diminished degree to the obstetrician, has the following objections:—1st. In the quantities required it would be poisonous. 2nd. It would cause severe irritation, and thus prevent the healing of lacerations. 3rd. It would coagulate the lochial discharge, causing its retention even within the uterus. 4th. To many patients it has a decidedly sickening odour.

Now, when at the meeting of the Clinical Society of London on the 13th of May, 1881, Mr. Lister recommended oil of eucalyptus as a substitute for carbolic acid where the latter was inadmissible, it occurred to me that this substitute might be more extensively employed in obstetric practice than had been considered safe with carbolic acid. Since then I have put it to the test, and its advantages I have found to be the following:—1st. It is non-poisonous. 2nd. In the quantity and strength required it is unirritating. 3rd. It does not coagulate the lochia, which, by separating the lips of the vulva, can be seen to flow out in a liquid stream. 4th. Its odour is, with rare exceptions, a pleasant one. 5th. It seems to act as a uterine stimulant, causing and assisting to maintain uterine contraction. Formed into a pessary of a suitable shape and size it is easily applied to the neighbourhood of the os, and retained there. To secure this, the pessary must be broad and short, must melt slowly but completely, and must contain a large percentage of the antiseptic oil. These requisites I have found the following formula to supply:—Oil of eucalyptus, six drachms; white wax, four drachms; cocoa butter, four drachms; mix and divide into twelve pessaries. One of these must be applied night and morning immediately after the usual sponging, and, though the napkins are frequently changed, the odour will be quite perceptible on the one removed prior to the next sponging twelve hours later. In cases of miscarriage, or when the lochia has diminished materially in quantity—say, six days after confinement—I have found the above strength produce irritation, and the following will then be found preferable:—Oil of eucalyptus, four drachms; white wax, 160 gr.; cocoa butter, four drachms; divide this mixture into twelve pessaries, and label them No. 2. These also may be used at first night and morning, and afterwards at night only. I show you these pessaries; they are made by first melting together the wax and cocoa butter in a vessel resting in hot water; the oil of eucalyptus is then mixed with this, and the fluid poured into the ordinary two-drachm pessary mould, each cavity being somewhat more than half filled. I have never been able to satisfy myself that the eucalyptus was absorbed into the system to any material extent. This is probable, however, and, in one case, seemed to be proved. This was a case of severely ruptured perineum, which was stitched and united throughout. The pessaries had been continued for sixteen days, when an erythematous rash appeared over the whole body, disappearing immediately on the cessation of the eucalyptic treatment. Though uncertain as to the fact of a material absorption of the oil into the system, I am persuaded that the oil does not remain at the os, but freely passes into the cavity of the uterus. For it is admitted that the uterus for several days after labour is naturally in an alternate state of contraction and relaxation, and whilst during contraction it will empty itself, during relaxation again whatever is lying at the os or upper part of the vagina will be sucked into the vacuum produced. The eucalyptus will therefore find its way quite into the uterine cavity. When I said that, with rare exceptions, the odour is agreeable, I referred to a decomposition of the eucalyptus oil which sometimes takes place, giving the napkin a semi-fetid odour. That this does not arise from a change in the lochia I have proved by simply omitting the next pessary when due; I then found that the lochia was absolutely sweet.

When I began a year ago to use this antiseptic in hospital practice, I ordered the pessaries to be used only for those patients who, from the nature of their labour or other cause, were likely to give trouble; and to those patients whose lochia had become offensive or whose recoveries were interrupted. In the case of the former the pessaries were begun immediately after labour; in the latter on the appearance of bad symptoms. In the former the result was invariably satisfactory; in the latter the treatment was a recognised aid to other measures. It was soon noticed, however, that the cases in which the labour was easy and natural gave afterwards considerable anxiety, usually from unrecognised mental distress, perhaps increased by the receipt of unwelcome news. I soon therefore saw the necessity for beginning the antiseptic pessaries immediately after labour in the case of all the patients. The consequence was that whereas offensive lochial discharge had been no rarity—and when once this appeared in one patient it rapidly spread to others—fetid lochia was almost entirely banished; the only case of undoubtedly putrid lochia having arisen from extensive superficial gangrene of the vagina, after a severe labour completed by the forceps. This woman, moreover, made a rapid and complete recovery. In some of the cases an offensive odour was suspected, but this had generally vanished when the next napkin was removed; or, if it persisted, was found to have arisen from the fact that the pessaries had been for a considerable time in the hospital, having thus lost part of their volatile oil. They ought therefore to be made as far as possible just as they are required, since they will change after a few days. During this period one of the patients had severe ascites, from which she died. There had been a history of disease, the exact nature of which could not be ascertained, but hepatic disease was supposed to be the cause of the ascites. About seventy ounces of fluid were removed by tapping. This fluid was absolutely sweet when removed, and it remained so for days after, making it exceedingly probable that there was no septic element in the peritoneal condition.

In private practice, where the class of patients is of a more hopeful nature, I have restricted the use of the pessaries to the cases requiring special treatment from the beginning of the puerperal state. Amongst these were the following:—A case of inversion which I was not called to till several hours after its occurrence; a case of premature labour following acute bronchitis in which the patient was almost in a state of collapse; a case of subacute phthisis; cases requiring operative treatment and with dangerous complications. These cases all did extremely well. In only one of them—the case of phthisis—was there at any time an offensive discharge, and this was in the second week, and forty-eight hours after the last pessary had been introduced. I should mention that it is now the practice at this hospital, as a special precaution, to use carbolic vaginal injections night and morning just before the introduction of the medicated pessary. In my private practice, however, the usual night and morning carbolic sponging alone preceded the use of the eucalyptus.

Regarding the use of eucalyptus as a curative in pyæmia, I have fortunately only one case to bring before you. In relating it I shall confine myself to the main points of the case.

Mary Anne M—— was admitted and delivered on November 22nd, 1881. Her labour was easy and normal. Beyond a "scared" look, and the fact that this was her third (?) illegitimate child, the case presented nothing unusual. The temperature rose, however, on the fourth day, and continued high. For some time there was nothing to account for the fever, there being no abdominal distension or tenderness till later on, and the discharge remaining sweet throughout the entire illness. No pessaries were used till the fever had set in. The patient steadily becoming worse, was, at an early stage of her illness, removed to another ward, which was set apart for herself and her nurse. It was not till the third week that the true nature of the disease was apparent. At this time several parts of the limbs became swollen, whilst later on a large fluctuating swelling appeared on the back of the chest. The treatment consisted at first mainly of large doses of quinine with aconite and a liberal amount of stimulants. Later on eucalyptus was given internally by the mouth and by the rectum. By the twentieth day it was perfectly evident that the patient was sinking, and that a few hours would see the end. Determined not to leave anything undone, I now ordered hypodermic injections every hour of a mixture composed of oil of eucalyptus, five minims, and olive oil, twenty minims. I had found that one part of eucalyptus to two parts of olive oil could be borne without irritation by a granulating perineum, and I thought one to four a safe strength to start with for hypodermic injection. This producing little or no irritation, the quantity was gradually increased to eight minims of eucalyptus to sixteen of olive oil. It was soon evident that the patient was

rallying; but as she improved, the irritation produced by the injections became so great that the resulting swellings could not be distinguished from those arising from the disease. The injections were now diminished in frequency, and finally, on the fourth day, abandoned. Soon the patient began again steadily to lose ground, rallying again on the resumption of the hypodermic injections. For a considerable time she seemed to hang between life and death, but under the generous care of the matron and the house-surgeon she gradually improved, leaving at last for the Town's Hospital with abscess of the left knee only, all the other swellings having slowly disappeared. There the knee was opened, and the case made most satisfactory progress. The woman called on me a few weeks ago. Her general health was then excellent, and beyond a slight limp she bore no traces of her illness.

From one case it would be unwise to draw positive conclusions as to the benefit of the eucalyptus used hypodermically as a cure for pyæmia, but I think I am justified in recommending that, under similar circumstances, it should be tried.

A CASE OF MEGRIM, WITH PARALYSIS OF THE THIRD NERVE.

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THE following case is, I believe, in many respects quite unique. Megrim accompanied by various motor disturbances has been recorded by Abercrombie and others; but these, while supporting the view that the pathological condition about to be described is rightly attributed to this peculiar class of neurosis, differ from it in many important particulars. As the ocular symptoms were most interesting, I sent the case several times to Mr. Eales, and his notes have enabled me to make it far more complete than I could have done without his assistance, and I take this opportunity of thanking him for the time and care he has so kindly given to its investigation.

Maria S——, aged nineteen, single, of no occupation, was admitted as an out-patient to the General Hospital on Jan. 15th, 1880, complaining of biliousness and drooping of the left eyelid. She stated that she had been ill five days, her illness having begun with sickness and pain in the left eye; the eyelid began to droop on Tuesday. She cannot account in any way for this attack. Her previous general health had been good; she had scarlatina when four years old, but has had no other illness except attacks similar to the present one, which have come at intervals of six or nine months ever since she was twelve years old. On each occasion the symptoms have been the same, sickness, pain over the left eye, and ptosis. She is usually very drowsy during these attacks. She was a well-developed girl, of fair complexion, with no abnormal symptoms or signs in the thorax. Her tongue was clean, but she said it had been very dirty. The vomiting had stopped that day. Her bowels were regular. Menstruation was regular and normal. Urine normal. She cannot sleep at present on account of the pain over the left eye. She was giddy yesterday; the pain is better to-day. Hearing and taste normal. Has never had any fits.

Examination of eyes. — Right eye: V=$\frac{1}{2}$. On ophthalmoscopic examination, a suspicious-looking hazy band was seen running across an artery and vein above the disc; the inner margin of the disc was not clearly defined. The vessels, especially the arteries, were large. — Left eye: Ptosis; complete paralysis of upper, lower, and internal recti. Pupil dilated more than the other, but not completely. Incomplete paralysis of sphincter and dilator muscles of iris. Paralysis of accommodation. On ophthalmoscopic examination the outer side of the disc was not very distinct. V=$\frac{1}{2}$ unaided; =$\frac{1}{1}$ with perforated disc. Astigmatic: vision not improved by −70 or +70. Her father and mother are both living. Father healthy; mother not well, but no definite disease. Has two brothers and one sister, all in good health; one brother died at the age of five of scarlatina. The patient was ordered a mixture containing rhubarb and soda, and two days later reappeared, feeling much better; the ptosis was less marked, there was no pain, and she could eat well. Eyes, under atropine: Ptosis perceptibly less, but still present.

Movements of eyes.—Upwards, *nil*; inwards, nearly complete; downwards, good; outwards, good. In convergence inward movement was good, but still some slight insufficiency. Ophthalmoscopic appearances: Fundus normal; disc oval. V=$\frac{1}{1}$ with perforated disc.

Jan. 21st: Feels well; ptosis about the same. She was ordered a tonic mixture containing mineral acid and strychnia. Eyes same as last note. There was no change noted till the following date.

Feb. 6th: With back to light both pupils the same size. Facing light, right pupil contracts more than left. Left pupil, moreover, is oval from above downwards; it contracts to light and on convergence, but more slowly and less completely than right. All the movements of the eyeball are perfect except upwards, the eye not passing above the horizontal plane. No ptosis now.—26th: Ptosis has disappeared almost entirely, but is evident at times. She has occasional headache, sickness, and giddiness, with pain over the left eye.

March 5th: As the ptosis did not disappear entirely, the following mixture was prescribed: Ten grains of iodide of potassium, five grains of bromide of potassium, one ounce of the decoction of sarsaparilla, to be taken three times a day.

April 12th: She had had a bad attack of pain and sickness again three days previously.

I had lost sight of her altogether for two years, when, on April 25th of the present year, she returned, with all her old symptoms fully developed. There was very marked ptosis of the left eyelid, and paralysis of all the muscles supplied by the third nerve; the pupil was dilated. The attack began a month ago with headache (pain in the left temple), sickness, furred tongue, and constipation, which continued for three days, when the eye began to droop. The pain and sickness have gone off, the tongue is clean, and the bowels are acting naturally. The patient says she has had "bilious attacks" since she was here, but has not had any drooping of the eyelid; with the exception of the "bilious attacks," which have been as frequent as every month, her health has been fairly good.

Examination of eyes.—Left eye: complete paralysis of all branches of the third nerve; ptosis; upper, lower, and inner recti, and also lower oblique, paralysed; external rectus and superior oblique intact; eye looks partially down and out by means of superior oblique, and rotates round antero-posterior axis at the same time. This rotatory movement ceases when the eye no longer looks downwards and outwards. The left pupil does not dilate more than the right in dull light, but does not contract, or only very slightly, on sudden exposure to full light. Paralysis of accommodation also. V=$\frac{1}{2}$ only. Ophthalmoscopic examination shows inner side of disc indistinct.

May 10th: Eye better; slight recovery of power in the rectus interni and levator palpebrarum. Upper and lower recti still quite paralysed; also paralysis of pupil and accommodation.—23rd: Ptosis almost gone; upper rectus quite paralysed; lower rectus beginning to recover; inner rectus considerably better; pupil still a little larger than the other.

July 7th: Paralysis of superior rectus complete. Movements downwards and inwards good, but not so great in the other eye; slight ptosis still. Right pupil larger than left, but in bright light right pupil smaller than left; left pupil contracts slightly in convergence. Patient sees double only when she looks upwards.

The main points about this case are the attacks of megrim, coming on at intervals, accompanied by paralysis of the muscles supplied by the left third nerve; some atony of the fibres supplied by the sympathetic, as seen by the failure of the pupil to dilate in a dim light in spite of the paralysis of the sphincter; and, in addition, the permanence of (1) complete paralysis of the superior rectus, (2) a slight degree of ptosis, (3) more or less amblyopia of the eye affected. I think the description of the attacks, the history of their recurrence over so long a period as seven years without any particular affection of the general health, and the absence of any reasonable suspicion of syphilis, together with the failure of iodide of potassium to modify the symptoms, justify the conclusion I have formed, in no hasty manner, that this is a case of true megrim associated with paralysis of the third nerve. Dr. Wilks[1] mentions megrim among the causes of paralysis of the third nerve, though he does not

[1] Diseases of the Nervous System, p. 436.

include the symptom in his description of this form of headache, and Horner[2] has specially described a form of ptosis in megrim which he attributes to paralysis of the non-striped muscular fibres of Müller, which are distributed in the orbicularis palpebrarum, and are supplied by the sympathetic. Eulenburg[3] and Rosenthal[4] mention the symptom, but merely refer to Horner's paper. That such a condition is rare is proved by the absence of all mention of it in Dr. Liveing's[5] well-known monograph on megrim, and in Galezowski's[6] more recent paper on the ophthalmic phenomena of megrim.

On the other hand, it is well known that megrim does give rise to a great variety of peculiar nervous phenomena, among which are temporary, partial, or complete blindness, hemiopia, luminous spectra, numbness and tingling of the fingers, mouth, lips, and tongue; cramps, transient hemiplegia, loss of taste, smell, and hearing, loss of speech, partial loss of consciousness, confusion of ideas, mental incapacity, giddiness, and vertigo. These conditions are not certainly more easy to accept as the results of a purely functional disturbance of the nervous system than those I have described, with this exception, that certain of the phenomena in my case are permanent. The amblyopia can be satisfactorily explained by the astigmatism, which is mixed, but which can be so far corrected that with prisms and a perforated disc the patient can read $\frac{1}{2}\frac{0}{0}$, so that the notion of its being due to any retinal condition may, I think, be dismissed in spite of the dubious nature of some of the notes of the ophthalmoscopic appearances.

It is not so easy to explain the permanent and complete paralysis of the superior rectus or the persistent although very slight degree of ptosis; nor do I feel able to make any suggestions at present which can throw any light upon this singular condition.

A CONGENITAL ANOMALY OF THE CONJUNCTIVA, HITHERTO UNREPORTED.

BY J. F. STREATFEILD, F.R.C.S., &c.

AT the Moorfields Eye Hospital, on the 11th of May this year, I saw among others in the crowd of out-patients, a lad who had evidently some conjunctival redness of both eyes, which on examination proved to be nothing but a slight catarrhal ophthalmia. To determine this point, and suspecting it might be a case of granular lids, I looked under the upper lid, and also specially, as usual, to the outer angle of the lower lid on its inner surface. For this purpose I made traction on the skin downwards, and then also somewhat outwards. As I was thus pulling the outer canthus away from the eyeball, and everting the lid, a conjunctival fold came into view, which evidently limited and abbreviated somewhat the normal amount of separation to be effected between the eyelids and the eyeball, the palpebral and ocular conjunctivæ, at this part. Then, with another finger, I also lifted the upper lid at the outer angle, and the fold I had observed came very prominently into view. It extended exactly horizontally from just behind and within the outer canthus, to nearly the outer margin of the cornea. It would not allow the lids to be lifted so far as they may be usually away from the eyeball, but the normal movements of the eyes when the lids were *in situ* were not by it interfered with. Being stretched, by lifting the two lids as I have described, the little straight fold was seen to be semi-transparent, and, seeming to consist only of the folded normal conjunctiva, it reminded me of the little vertical fold of mucous membrane under the tongue of infants to which one's attention is so often directed, when, as their mothers and nurses say or suppose, the child is "tongue-tied." In each palpebral aperture this abnormal frænum existed, and was altogether quite symmetrical. There were no other oculo-palpebral prominent folds, nothing like symblepharon in either eye. The patient knew nothing of the anomaly I am describing; he had had nothing the matter with his eyes but the present insignificant conjunctival inflammation. Symblepharon as a congenital affection has been reported, but the present case cannot possibly, I think, come under this category, because—(1) the conjunctiva was only shortened, or of little extent, directly outwards in either eye, as a little fold forwards and horizontally, instead of a backward and vertical fold. It was not thickened, or otherwise changed in appearance, as are the folds in the reported cases of congenital symblepharon, which seem to have been the result of intra-uterine inflammation, nor did the eyes themselves and the eyelids, excepting as regards these purely conjunctival frænа, show any structural abnormality, any inflammatory results, fœtal or otherwise, or any ill-development—if I may assume that these frænа were evidences of ill-development of the conjunctival sacs; because (2) these frænа in my case were only just at the outer angle—i.e., where any symblepharon is not very likely to occur; and also because (3) of the exact symmetry that existed. It was, I think, a partial malformation. I find no notice of any such congenital anomaly in Professor Manz's chapter (vi.) in Graefe and Saemisch's Handbook, or in other books. These frænа may perhaps be explained by a consideration of the development of the eyelids; an upper, lower, and inner lid are formed, of which the latter, although in the human subject it is quite rudimentary, yet it must not now be forgotten, for in the novel and possibly unique case I am recording, the forward folds of conjunctiva were only at the outer canthus and exactly horizontal—that is to say, where without the rudimentary inner third lid, the two greater eyelids come close together into contact, being formed by two, an upper and a lower, infoldings of the integument. If such infoldings above and below, as two pockets, are likely, as I suppose, to leave between the two a tegumentary ridge or outfold, I will venture to guess that I have in the present case found a congenital abnormality not so very rare as hitherto undetected. We constantly open eyelids and look up and down under the two lids, but we do not specially observe if the two lids together are perfectly and normally separable from the eyeball at their junction at the outer angle. Is the common congenital abnormality called epicanthus a (displaced) development of the third eyelid of the lower animals? Is the plica semilunaris in such cases absent? I have not myself observed that it is.

[2] Ueber eine Form von Ptosis, Monatsbl. f. Augenheilkunde, 1869, vii.
[3] Ziemssen's Cyclopædia, vol. xiv. [4] Diseases of the Nervous System.
[5] On Megrim and Sick-headache, 1873.
[6] Arch. Gén. de Méd., June and July, 1878.

ON THE

VARIETY AND DIFFERENTIAL DIAGNOSIS OF VENEREAL SORES.

BY J. CARTER BATTERSBY, M.B., B.CH. T.C.D.,
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As the result of recent research in this country and abroad, and from individual observation, it would appear that two distinct classes of venereal sores exist—namely, first, those that are accompanied with and followed by constitutional symptoms; and, secondly, those that are not. The former have been designated hard or specific, and the latter soft or non-specific. It is, I think, a pity that these terms should have gained such universal acceptation, as they are not only partly erroneous, but liable to lead the inexperienced into much difficulty, and not unfrequently into errors of diagnosis and prognosis. It would be preferable (in the absence of less misleading names) to use the simple and intelligible terms, syphilitic and non-syphilitic, according as the local lesion with its accompanying symptoms presents the characters of a sore from which the constitution will become affected with syphilis or otherwise. As to the duality of the poison, we meet with many eminent surgeons who distinctly affirm that there is but one venereal poison capable of producing venereal sores, and that all such sores are syphilitic. That the constitution does escape contamination in certain cases, is ascribed to the early treatment and administration of mercury, &c.

There was a time when the physician drew no line of demarcation between typhus and typhoid fever, but at the present day there are few who will doubt that the one is as distinct from the other as variola is from varicella. Nor do we now believe that the poison of typhus can produce typhoid, or that of variola varicella. Each is perfectly distinct, has its own period of incubation, its own peculiar symptoms, and individual specific poison. By an analogous mode of reasoning, drawn from the result of practical ob-

servation and inquiry, we are, I think, rationally bound to admit that two distinct classes of venereal sores exist, that each has its own peculiar period of incubation, its own symptoms, and its own specific poison. Is the poison, we may ask, which produces a syphilitic sore and infects the system with syphilis capable of microscopic examination or chemical analysis, and if so, does any perceptible organic difference exist between it and the peculiar specific poison which can only produce a mere local ulcer or ulcers, and which as such are never followed by constitutional symptoms? No solution to the above problem has as yet been satisfactorily determined.

In describing the local lesion or primary syphilitic sore which is always followed by constitutional symptoms, I have usually seen the following three varieties:—

1. *A sore or sores characterised by induration or hardness from the beginning and throughout its entire course.* This first variety may appear as (*a*) a "cupped-shaped" cartilaginous cavity of variable size, and situated on an indurated base, or (*b*) it may be seen as a superficial excoriation or elevated elliptical nodule of an ash-grey or livid colour, and generally situated on the corona glandis. Sometimes this first variety appears as (*c*) an induration beneath the true skin.

2. The second variety (*soft in its early stage, but subsequently becoming indurated*) is seen as a sore or sores which in their early stage simulate the non-syphilitic ulcer or ulcers, but subsequently become indurated and followed by constitutional symptoms. It is exceedingly difficult to diagnose this second variety in its early stage, as I believe it is invariably complicated by the existence of non-syphilitic sores, one or more of which after a variable time may assume the characters of the true syphilitic ulcer or ulcers. The question may arise as to how this peculiar change in the non-syphilitic ulcer takes place, and an explanation be called for. I believe it is due to the existence of a double poison manifesting itself in the one individual, contracted either at the same time (as we know that both classes of venereal sore may exist in the same person) or at different intervals. The period of incubation of non-syphilitic sores being much shorter than that of the syphilitic, they first appear, and whilst being treated the incubative stage of the true syphilitic sore is accomplished, and the lesion becomes manifest. The last case which came under my observation of this second variety of syphilitic sore is worthy of record, as it clearly illustrates the difficulty that attends our early diagnosis.

A corporal in the 4th Dragoon Guards was admitted to hospital under my care suffering from what appeared to be two ordinary non-syphilitic ulcers, situated on the upper surface of the glans immediately in front of the corona. The ulcers were shallow, and had all the characters of the so-called "soft sores." After three weeks from admission to hospital both ulcers became elevated and livid, and presented the appearance of "cupped-shaped" cartilaginous cavities situated on indurated bases; subsequently unmistakable secondary symptoms followed.

3. The third variety of syphilitic sore—namely, *that which is soft from the beginning and throughout its entire course, but followed at a given period by secondary symptoms*—I have usually seen on the external integument situated on the dorsum or side of the penis. When this sore comes under our observation it is generally of two or three days' duration, is circular in form, about the size of a sixpence, edges irregular and sharp, surface presenting a finely granular appearance of a yellow-pink colour, and having a thin ichorous discharge. There is no induration accompanying this sore, either in its early stage or after it has healed, and it is invariably followed by constitutional symptoms. Again, it is our lot to see a sore situated probably on the side of the corona and glans, which rapidly spreads in circumference and depth; the edges seemingly raised, the surface deep and irregular, of a dark or livid colour, and discharging a thin watery fluid. I have been unable to detect any induration about this sore, and have seen it followed by severe secondary symptoms.

Having described and attempted a classification of those ulcers and lesions which I have seen followed by constitutional symptoms, I shall endeavour, under the head of Class II., to point out the non-syphilitic sores which, as such, are never followed by secondary symptoms.

1. A sore or sores, having a great tendency to multiply, often numbering as many as twenty, and generally situated in the hollow between the glans and the prepuce, on the corona glandis, prepuce, frænum, glans, in the meatus, urethra, or on the external skin. These ulcers are first noticed from twenty-four to forty-eight hours after coitus; in some cases, however, they may not appear until the fourth or fifth day. There is generally a good deal of heat and itching about the parts, the ulcers, as a rule, being round or elliptical in shape, and of variable size, very shallow, edges sharp, surface yellowish-pink colour, discharging pus, and surrounded by a narrow red areola. There is no induration from the beginning or throughout the entire course of these ulcers, unless, as sometimes happens, induration occurs as the result of certain local applications.

2. A sloughing sore which may begin as such, or appear so shortly after the ordinary sores are discovered.

3. Gangrenous ulceration or sloughing phagedæna is, fortunately, of rare occurrence; when it does take place the greater portion of the organ may be destroyed. It would appear that an elongated prepuce predisposes to this formidable affection, the upper portion of which first becomes affected. It is, I think, well to give a very guarded prognosis in all cases of sloughing or phagedænic sores. The ordinary non-syphilitic ulcers must not be confounded with herpes or aphthæ of the glands and prepuce, or with what sometimes occurs, a ruptured frænum, the result of mechanical violence. These, as a rule, occur after connexion, have no specific characters, and are unaccompanied by glandular or other complications.

The following table, giving the differential diagnosis between syphilitic and non-syphilitic ulcers, may be useful in helping to form an early and correct opinion of venereal sores.

Syphilitic Ulcers or Lesions.	*Non-syphilitic Ulcers.*
1. Incubation ten days to eight weeks.	1. Incubation twenty-four hours to five days.
2. Collateral symptoms: Probable congestion of soft palate and tonsils, slight induration of lymphatic glands in groin, drowsiness, headache, and depression of spirits.	2. Collateral symptoms: Probable enlargement and swelling of one lymphatic gland in groin.
3. Primary lesion or lesions assume some of the varieties described under Class I.	3. Ulcer or ulcers assume the characters described under Class II.
4. Thin ichorous discharge.	4. Discharge always pus.
5. Generally single.	5. Seldom seen as a single ulcer, and have great tendency to multiply.
6. Glands in groin enlarge, but seldom suppurate.	6. An isolated gland becomes swollen, and frequently suppurates.
7. Fever present after a short time.	7. Fever absent, unless due to suppuration.
8. Ratio to non-syphilitic ulcers 1:4.	8. Ratio to syphilitic ulcers 4:1.
9. Constitutional symptoms invariably follow.	9. Constitutional symptoms never follow.
10. Can only have one attack, unless, as in certain rare cases of small-pox, the system, after the lapse of many years, becomes liable to a second seizure.	10. May suffer repeatedly from such sores.
11. Prognosis unfavourable; must be guarded, and given in accordance with the severity or otherwise of the secondary symptoms.	11. Prognosis (as to the liability of the system becoming affected) always favourable.

AN appeal has been put forth for funds to provide proper medical aid for the sick of Northern India, who, it seems, are deplorably victimised by the ignorant hakims. The services of Dr. Sen, a graduate of the Calcutta University, have been secured by the Cambridge Mission, and to sustain him in the work subscriptions will be received by Mr. Egerton Hubbard, of Cadogan-place, S.W.

A NEW hospital for the isolation and treatment of infectious diseases was opened near Sittingbourne on Tuesday. It has been built at a cost of £5000, and is the first building of the kind erected in Kent, though others are in course of construction, or are contemplated, at Chatham, Maidstone, and Faversham.

SOME MEDICAL AND SURGICAL USES OF BELLADONNA OR ITS ALKALOID.

BY J. H. WHELAN, M.D., M.CH.

I MAY be excused for making a few remarks on some of the actions of this important medicament without touching on its important effects on the cord, salivary and sweat glands, splanchnics, oculo-motor and sympathetic of the eye, &c. It was called "belladonna" by the Spaniards on account of its being used by the Spanish beauties to dilate their pupils, thus enhancing their personal appearance at the expense of dim vision, fashion ever requiring sacrifices. But while opium may be called the *prima donna* of drugs, belladonna vies with it, and may be called *bella donna* on its own merits with justice. It is well known to physiologists that belladonna and its alkaloid have the power of doing away with the inhibitory action of the vagus on the heart. Physicians and surgeons seem to overlook the fact that syncopic attacks are in the main caused by reflex cardio-inhibition. Every medical man knows that Mr. Schäfer, of University College, has recommended the use of atropine *sub cute* before chloroform inhalation, in order to do away with the effects of the vagus stimulation supposed to be caused by this anæsthetic. Yet how very few use it! I do not know of an Irish hospital wherein the practice has been adopted. We must conclude that the surgeons are sceptical of its good effects. Without going deeply into physiology, let me briefly summarise the evidence of cardio-inhibition, its causes, and the effects of atropine.

1. If we send an interrupted current into the exposed vagus of an animal, after an initial latent period (which is ·16 second in the rabbit according to Donders), the heart stops beating and remains in diastole.

2. If we give a dose of atropine before applying the electrodes no such thing takes place.

3. The application of muscarin or pilocarpine seems to produce profound cardiac inhibition, which a small dosage of atropine removes.

4. Nicotine slows the heart considerably, but its effect passes speedily off, the heart assuming its normal rhythm. Stimulation of the vagus has then no effect, but the dosage of muscarine at once produces a standstill. It would seem from this that nicotine paralyses the cardio-inhibitory vagal fibres after an initial stimulation, while atropine, which will remove the effects of the muscarine, has an effect to boot on the heart itself—Bidder's ganglia, or whatever it may be.

5. We may stop the beating of a frog's heart by exposing its mesentery, and slapping it with a scalpel laid on the flat, by crushing one of its limbs, or in other ways, all by causing a reflex action.

What do all these, the results of vivisectional experiments, teach us? They teach us what Schäfer told us long ago, that the hypodermic use of atropine before chloroform inhalation may ward off death itself. But I for one do not believe in Schäfer's idea that chloroform stimulates the vagal inhibitory fibres, but incline to the belief that chloroform weakens the heart's action, that it lessens all protoplasmic activity; that when the shock comes in the cutting, &c., of the operation, we have a reflex cardio-inhibition over which the heart is unable to mount in its weakened condition. We need, in truth, have no operation at all, and this is a point to which I would call special attention. In the administration of the drug when the patient is struggling under its influence, an action in the intellectual centres, the supervention of fright, terror, or any strong impulse may cause a like effect, and death. Should the latter supervene we are treated to the oft-told tale of the failure of the heart's action. Evidently these things may occur under all anæsthetics, and are more potent in those that are of a depressing nature *per se*. They are not specific to chloroform. A dose of atropine would in all cases be a useful preventive, and perhaps, if adopted in future, save some of our species temporarily from the jaws of our grim-visaged foe.

Turning for a moment from Surgery to her kindred sister, Medicine, there are many cases in which belladonna or its alkaloid would prove useful. In some extreme cases of hysteria or allied disorders we have patients going from one faint into another, frequent syncopic attacks. In the allied abnormal condition of pregnancy, that called by old authors hypothæmia, we have the same condition. In both this drug ought to prove extremely useful. In the former we have impulses originating probably in the higher centres, causing frequent inhibitions; in the latter the less noble organ, the uterus, takes the place of the brain. In certain apparently asthenic inflammations, particularly in peritonitis, a very weak pulse is a common thing. One would imagine that this, which is fast, could in no way be connected with the so-called cardio-inhibitory mechanism, but it is just possible that it might. The inhibitory fibres, being acted on slowly and gradually, become in part exhausted, while the "accelerator" nerves might develop into action. Be this as it may, I once saw a very interesting case under Surgeon Hamilton in the Co. Meath Infirmary. A man was brought in suffering from slight localised abdominal tenderness and obstinate constipation. The pain increased and the pulse became extremely weak and fast, while the constipation increased after the trial of numerous expedients. Surgeon Hamilton ordered him a grain of extract of belladonna every hour. By the time he had taken his second dose the pulse had improved wonderfully, and assumed the normal type in all its characters. The patient ultimately got worse and the pain increased, when he was put on full doses of opium. He died and the autopsy revealed a perforating ulcer of the pylorus. It is difficult with our present knowledge to interpret this case aright. By what means did the improvement of the pulse occur? Was it by the removal of the cardio-inhibitory action developed reflectorially from the inflamed peritoneum? Some no doubt would refer the action to an influence by which the arterioles were contracted *à la* Burdon-Sanderson's theory of digitalis. But leaving this rather difficult problem, I think we have in the deadly nightshade a means by which we can prevent persons from fainting, so that it is just probable, in the future of society, when a young lady feels inclined to faint, instead of running for the brandy bottle recourse will be had to an atropine parvule.

By the introduction of the nozzle of the hypodermic syringe the surgeon may remove the effects of the shocks of gigantic wounds of railway accidents, of common wounds on the battlefield, for the primary shock of the latter sweeps away nearly as many men as their secondary consequences. I had once in the days of my studentship to open a small onychial gathering in a girl's finger. She was of an extremely nervous and erotic constitution, but withal strong and well made. About a year or so before she had been an inmate, for over four months, of a public institution—an inveterate case of hysteria. Immediately after the opening of the minute abscess she fainted three times. Some time afterwards I had to remove the stump of a tooth for her; on this occasion she fainted twice. Less than a month afterwards I had to attempt the removal of another. This latter was the most painful and longest ordeal to her, as owing to the friability of the stump it was extremely hard to be got at. I gave her, twenty minutes before using the instrument, twenty-five minims of tincture of belladonna. She did not faint nor manifest any signs of weakness—a result which must, I think, be attributed to the narcotic. If then, as it seems likely, we are in possession of a drug which will prevent cardio-inhibition, cases of "death from shock" ought to fade from the death register of surgical practice. It is perhaps right to state that Ringer and others consider that the paralysing action of atropine on the vagus is no longer tenable, though their ideas for thinking so do not seem clear.

Belladonna is sometimes serviceable in annoying nocturnal emissions. It will be found very useful indeed if the emissions be accompanied with erections, but perfectly useless if they be not so accompanied. This is in keeping with Nicolski's results, that atropine paralyses the "dilator" fibres of the nervi erigentes, while muscarine produces erection apparently by stimulating the local dilator mechanism, thus resembling what appertains to the heart. When therefore we have a case of excessive nocturnal emissions with erections, minute doses of belladonna and bromide of potassium will speedily effect a cure when exhibited at bedtime.

Dr. Gentilhomme of Reims, I see by the late journals, has employed a pill containing one-hundredth of a grain of sulphate of atropine in a patient suffering from coryza, and very subject to it, with very excellent results. Fifteen minutes after the first administration all sneezing had ceased, the secretion stopped, and respiration became normal. Eventually the attacks diminished, and finally disappeared under its influence. If Gentilhomme's conclusions turn out

correct, there will be a very decided improvement made in the treatment of catarrh. Dr. G. Johnson's treatment by full doses of opium invariably gives rise to unpleasant sequential symptoms, while Jukes Styrap's frequent minute doses with antimony are very depressing, to which I can bear personal testimony.

Loughrea.

A WAISTCOAT-POCKET AURAL REFLECTOR AND SET OF SPECULA.

BY E. CRESSWELL BABER, M.B. LOND.,
SURGEON TO THE BRIGHTON AND SUSSEX THROAT AND EAR DISPENSARY.

IN comparison with some more favourably situated organs, such as the eye and the skin, the ear is placed at a disadvantage, inasmuch as it usually requires for the diagnosis even of its more common diseases the use of certain instruments. It is therefore of importance that these instruments should be made as simple and portable as possible. A great step in advance in this direction was undoubtedly made when von Tröltsch introduced into general use the aural speculum and concave reflector, by means of which an ear can be inspected either with day light or artificial light. Under my direction Messrs. Miltitkin and Down of St. Thomas's-street, Borough, have modified these so as to render them still more portable. The reflector (Fig. 1, reduced in size) consists of two circular mirrors, each

FIG. 1.

2⅝ inch (about 6½ centimetres) in diameter, and firmly jointed together at the edge, so that when folded their reflecting surfaces come into contact. One mirror is made of glass and is concave, having a focal length of 5½ inches; the other is nickel-plated and plane. Both have a central circular aperture. With the concave mirror the ear may be examined either with ordinary daylight or with artificial light, whilst with the plane mirror sunlight may be reflected into the ear. The focal length of the concave mirror is purposely made rather long in order that it may also serve for an examination of the nasal cavities from the front, and for throwing light into the fauces in inspecting that region. With this reflector and a bent hairpin to draw out the ala of the nose a very fair inspection of the nasal cavities can be made. The nest of specula (Fig. 2, natural size) con-

FIG. 2.

sists of three, made of silver, fitting accurately one into the other. They are shorter than those in common use (measuring 3 centimetres—1⅛ in.—in length), and are made as light as possible. The smaller ends of the specula measure respectively about 6 by 7, 5 by 6, and 4 by 5 millimetres in diameter. The largest speculum, measuring at its broad end 17 by 18 millimetres in diameter, is fitted with a cap, which is preferably jointed on to the flatter side of the speculum, and not to the end of the oval, as shown in the figure. The shortness of the specula does not interfere, I have found, in any way with their practical utility, although, of course, they afford less leverage for moving them in the ear than the ordinary specula. With these two small instruments in his pocket, the practitioner can, at a moment's notice, inspect an auditory canal and gain important information as to the state of a patient's ear. Others, no doubt, like myself, have frequently been requested to look at So-and-so's ear, as he or she was suffering from earache or deafness. Instead of deferring one's examination to a future period, with these instruments at hand the auditory canal can be immediately examined, and the case prescribed for on rational principles. If, for instance, the meatus be occluded with cerumen, instillations of a solution of bicarbonate of soda can be ordered, which will facilitate its removal with the syringe at the next visit; if the meatus be filled with pus, directions can be given to syringe the ear with warm water; if the meatus be clear, and the membrane shows signs of acute inflammation, or of inflammation in the drum cavity, the immediate application of a leech in front of the tragus will probably be of great benefit, and any other instruments likely to be required, such as the Politzer bag or paracentesis needle, can be brought at a subsequent visit. Without multiplying instances, it is self-evident that, especially in acute cases, such as are met with in general practice, the earlier a case is examined the more successful and satisfactory the treatment is likely to be.

AN EVACUATOR FOR THE BLADDER.

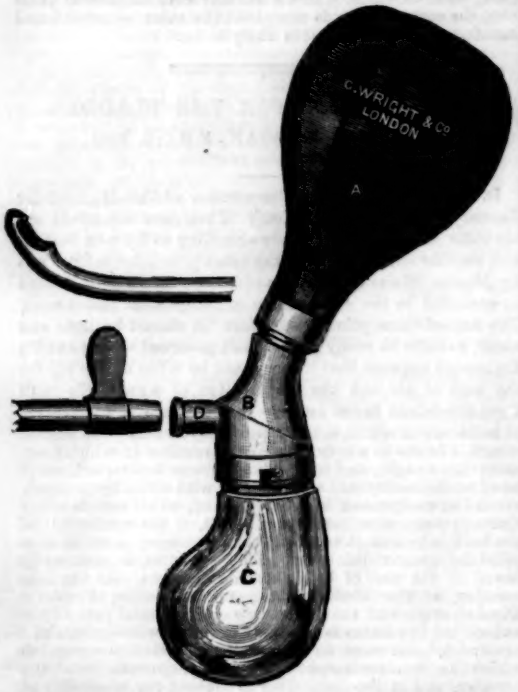
BY JOHN H. MORGAN, F.R.C.S. ENG.,
CHARING-CROSS HOSPITAL.

IN a lecture published in the number of THE LANCET for January 7th, 1882, Sir Henry Thompson describes an aspirator which had been made according to his own design, and another modification of the same principles carried out by Messrs. Weiss and Sons, and he lays down some points as essential in the construction of an efficient instrument. The first of these principles is that "it should be light and small, so as to be easily grasped and governed by one hand"; the second requires that there should be a tap at the top for the exit of air and the introduction of water. To fulfil these conditions is not an easy matter, since any apparatus of india-rubber which is to support above a heavy tap and be attached below to a cylindrical glass receiver in which fragments are caught, and to which a catheter is attached, must be of such density and size as to be with difficulty grasped, much less compressed by a single hand, at all events many times in succession. In other words, if the continuity of the bulb is broken at two points, its resiliency must be supplied by greater thickness. This objection is practically found in the case of both these instruments. At the late meeting of the Medical Congress in London, Professor Bigelow explained that "the new and essential part of the evacuating apparatus is the large catheter, whether straight or curved," and went on to describe the various apparatus which he has contrived to extract fragments from the bladder, and at the same time to prevent the possibility of their return. These instruments were figured and described in the Transactions, but that Professor Bigelow is hardly yet satisfied is shown by the fact that at a recent meeting of the New York Academy of Medicine he exhibited the evacuator which he has "finally settled down upon as being the best," adding that the ball-valve and strainer which formed part of his former instrument were a "little complicated" and "apt to clog."

Adhering to the principles laid down by these two eminent lithotritists, I have been at some pains to contrive an apparatus which should at once be effective in action, but of simpler construction than those hitherto invented. The result of my efforts is an instrument which is figured below. It consists of an india-rubber bulb (A) of moderate resiliency, and capable of containing about twelve ounces of water. This is of the shape of an inverted pear, and its narrow portion is fixed to a metal ring, which can be attached to or removed from the central portion of the apparatus by means of a screw. This is only required for convenience of carriage or for the purpose of cleaning the apparatus. In order to allow a better view of the glass-receiver, the bulb is attached at an angle slanting backwards to the rest of the apparatus, which hangs perpendicularly. The central portion is of metal,

and forms one with the bulb above, and is attached by a bayonet-joint to the glass receiver below. In front projects a short tube (D), into which the catheter—the largest of Bigelow's sizes—fits when the instrument is in use, but which can accommodate catheters of a smaller calibre. Running diagonally downwards in the interior of this portion of the apparatus, and fixed above, just at the entrance of the passage of the tube (D), is a perforated metal disc, which is placed in such a position that anything carried through the tube (D) must directly impinge upon it, and be thrown downwards. The glass-receiver (C) is made to fit closely to the central portion, and is shaped like the handle of a pistol, with two objects—partly because by this curve an interruption is made of any current of water carrying with it fragments of detritus, and partly because in the forepart of this transparent bowl the size and quantity of the fragments can be seen and estimated by the operator.

In order to fill the apparatus, the receiver (C) must be detached and filled, and the air driven out of the upper portion under water. The two pieces being filled, must be fixed under water, which can be done in a large basin or bucket, and for security the forefinger should be placed over



the mouth of the tube (D), to prevent the escape of any water, although if the instrument is held by the solid portion and inclined slightly backwards, the pressure of the atmosphere is sufficient for this purpose. The india-rubber bulb must not, of course, be touched until the tube (D) has been adjusted to the catheter. It will then be found that the weight of the upper and lower portions is so evenly balanced (when full) as to make all manipulation easy, and entirely under the control of one hand, so that water can be injected into the bladder and withdrawn as rapidly or slowly as is wished, and the position and direction of the catheter altered.

In using this, and all other instruments for a similar purpose, it is well, after forcing water into the bladder, to pause for a second or two before relaxing the pressure on the bulb. By so doing the fragments which have been set in commotion can settle at the bottom of the bladder, and thus come nearer the eye of the catheter, and are withdrawn by the returning current of water. In this apparatus the fragments striking against the metal disc are at once thrown down into the glass receiver, where they remain undisturbed in any position of the instrument. The apparatus has already been used and approved by several London surgeons.

Chapel-street, Park-lane, W.

STRANGULATED HERNIA OF FIVE DAYS' DURATION IN A WOMAN AGED EIGHTY-FIVE; OPERATION; RECOVERY.

BY C. A. OWENS, M.D. BRUX., L.R.C.S.I.

ON Sept. 23rd, 1879, I was called to see M. S——, an old woman, aged eighty-five, who was suffering from sickness and constipation. I found that these symptoms had been present for 120 hours, and were due to the presence of a right strangulated femoral hernia. There was a tense, hard, painless tumour in the corresponding region; she had the usual anxious expression of countenance; pulse 75; temperature 101°. The vomiting was not stercoraceous. Having tried the taxis carefully, but without success, I applied an ice-bag to the tumour, and tilted up the foot of the bed, which proceeding had enabled me to succeed in reducing a hernia under similar circumstances. Later in the day I again visited the patient, and finding reduction impossible, I administered chloroform to her with the understanding that if taxis then failed I should proceed to operate without further delay. Taxis not succeeding under chloroform, I operated in the usual way, being obliged to open the sac, and relieving the stricture by slightly nicking Gimbernat's ligament. The bowel was congested, but retained its natural lustre, and was returned into the abdominal cavity without any difficulty. The wound was closed by sutures, and dressed with a pad of lint supported by a spica bandage. The patient rallied well after the operation, and I left her comfortable, with instructions to take an opiate to procure sleep.

Sept. 24th: Patient cheerful; had rested well without the opiate, which she declined to take, as well as a stimulant in any shape; no pain; temperature 101·5°; pulse 72.—25th: Patient, though uncomplaining, was not quite so well; her temperature had gone up to 103°; pulse 96, and intermittent; no sickness and no tenderness of abdomen.—26th: Patient better; pulse 96; temperature 102°.—27th: Much better; temperature 100°; pulse 112. Bowels had moved naturally without medicine. The patient continued to improve.

On Oct. 1st I removed the dressing, and found the wound entirely healed; sutures removed. From this date the patient advanced rapidly to perfect recovery without any untoward symptom.

Remarks.—This case is worthy of notice on account of the very advanced age of the patient (eighty-five) and the length of time the hernia was strangulated. No credit can be given to opium, as she took none either before or after the operation; nor to stimulants for the same reason, the patient having a decided aversion to their use. She was out in the fields gleaning in three weeks, and is alive and well now at the advanced age of eighty-eight. I was assisted by my partner, Mr. Barton, during the operation.

Long Stratton, Norfolk.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Prooemium.

GUY'S HOSPITAL.

EPITHELIOMA OCCURRING IN AN ULCER AND IN AN OLD CICATRIX.

(Under the care of Mr. BRYANT.)

THE two following cases are interesting examples of the occurrence of epithelial cancer in old cicatrices. In the first case the ulcer was of about twenty years' standing, while in the second the epithelioma attacked a cicatrix nearly forty years old. These growths mostly affect ulcers on the lower limbs, but in the second of the subjoined cases the scar was in the axilla. Though the epithelioma usually begins as a

papillary enlargement, it sooner or later involves the adjoining textures, and may finally completely penetrate the bone, as in Case 1.

CASE 1. *Epithelioma in an old Ulcer of the Leg; Amputation at Knee-joint; Abscess in Stump; Necrosis; Relieved.* (From notes by Mr. Kendall.)—John G——, aged sixty-two, a cabman, was admitted on April 20th, 1881, into Job ward. He had had syphilis, but he did not know how many years ago, and had otherwise had good health. In the year 1861 he struck his left leg and an ulcer formed, and about 1877 he struck his right leg. In the year 1878 he was in the Plumstead Infirmary, where his legs were poulticed and lotions were applied, resulting in a perfect cure of the right leg. The ulcer of the left leg healed up to the size of a shilling. Both legs got worse after his discharge from the infirmary. About six months before admission into Guy's a quantity of black blood ran from the ulcer in the left leg. He had been in great pain all along. Dr. O'Connor of Greenwich had cauterised his ulcer and cut it.

On admission there was on the left tibia a large growth occupying the lower half of the bone and measuring about six inches from above downwards, and five inches from side to side, and being about three-quarters of an inch above the surface. The inner three-fourths of the ulcer were occupied by the growth, and the outer one-fourth was comparatively healthy; the patient had also a tense hard translucent swelling of the scrotum. Urine had an acid reaction, with specific gravity 1008, and was free from albumen and sugar.

On April 24th, under an anæsthetic, and after an Esmarch's bandage had been applied, an incision was made about an inch below the tubercle of the tibia round the leg. The skin was dissected back as far as the lower portion of the patella. The leg was flexed and the joint opened by cutting through the ligamentum patellæ. The joint was then cut from behind, while the limb was extended. The crucial ligaments were then divided, and the leg was removed. As there was considerable difficulty in twisting the end of the femoral artery, on account of its giving off a kind of axis, a catgut ligature was used. The other vessels were all twisted. The hooded flaps were brought together by silk sutures. Accurate juxtaposition could not be obtained, and so two "ears" of skin were left at the upper part of the wound. A drainage-tube was introduced, and the wound dressed with terebene and put upon a splint. Temperature after operation 98°. An injection of morphia was given.

The tibia was occupied by an epithelioma. At the upper part the medullary cavity, just above the tumour, was filled with new bone, but above this the medulla was normal, and the margin abrupt. Before making the section the bone was continuous across the growth, but it broke during the sawing with very little force. The surface of the bone near the growth was rough and "carious" from new deposit at the posterior surface. The bone abutting on the growth was also eaten out and rough.

On May 2nd the dressings were removed from the stump. The outer ear of the skin was sloughing. There was an offensive discharge, and the patient complained of tenderness on the outer side of the femur. On the 7th there was some gaping between the flaps. A week later the cartilage at the base of the internal condyle had turned black, and was dying. There was a fissure in the centre of the upper part of the tongue, with hard edges having a greyish appearance. On the 23rd a fluctuating swelling had formed over the lower third of the femur on the outer side. The swelling extended about three-fourths of the way round the femur, which bone was denuded of all tissues, except the periosteum and some granulations. The swelling was opened, and a large quantity of pus came away. The cavity was well washed out with iodine lotion. On the 27th there was still considerable discharge from the abscess. The urine was tested; specific gravity 1024, acid, no albumen or sugar.

On June 6th the femur was found to be necrosed for nearly three-fourths of its length. Eight days later there was still a considerable discharge, and a small abscess near the end of the stump was opened.

On July 25th the wounds were healing but slowly. There was a chocolate-coloured discharge from the stump.

On Sept. 5th six skin grafts were applied to the stump wound. On the 12th two small fragments of necrosed bone were removed from the stump.

On Dec. 2nd the left leg had broken down in two places about the size of half-a-crown. There was one ulcer about the size of half-a-crown on the right leg. On the 5th the patient went out. The sinuses were unhealed, and the parts of the femur were necrosed and in position.

From April 24th to June 21st the temperature ranged mostly from 98° to 100°; once (June 20th) it rose to 102·8°, but fell to normal on the same evening After June 21st it rarely exceeded the normal, and then only to a slight degree.

CASE 2. *Epithelioma of Axilla arising from Scar; Excision; Acute Mania; Relieved.* (From notes by Mr. Manley.)—Eliza H——, aged forty-seven, was admitted on Oct. 11th, 1881, into Lydia ward. She was married, and had had three children. Thirty-nine years ago she was badly burned over the right breast and shoulder. The cicatrisation was almost complete, except at a small surface near the anterior fold of the axilla. This remained about the same size until four years ago, when it began to increase in size and to discharge. Seven months before admission it was about the size of a penny, and had extended so that there was a large ulcer occupying irregularly the interior and exterior folds of the axilla. Its edges were hard, everted, and infiltrated, and slightly covered with thin adhesive pus. The base was hard and irregularly granulated. The axillary glands could not be reached, but there were no enlarged glands in the neck. The nipple was destroyed when she was burned; but she stated that milk had oozed from a small hole whenever she had suckled.

On Oct. 25th, under anæsthetics, the growth was dissected away, commencing in the centre of the axilla and extending round the thoracic portion. In dissecting away in the latter part the breast tissue was cut into, and a quantity of creamy pus exuded. Five or six small vessels were twisted during the operation. The growth was removed whole, the disease not having penetrated beneath the fascia. A few cuts having been made in the edges of the wound with a view to remedying the contractions of the old cicatrix, the wound was dressed with eucalyptus gauze. On the morning of the 31st, though the wound was progressing favourably, the patient became delirious, and morphia injections were given by force; and in the evening the patient tried to hang herself.

On Nov. 24th, the wound gave no trouble; but the patient seemed bent on suicide, and was discharged.

The temperature was for the most part about normal throughout. On the evening of Oct. 29th, it attained its maximum of 100·8° F.

QUEEN'S HOSPITAL, BIRMINGHAM.

BURN OF ABDOMEN, SCROTUM, AND PENIS, CAUSING PHIMOSIS; CIRCUMCISION.

(Under the care of Mr. WEST.)

EDWARD L——, a stout, single man, aged fifty-three, was admitted, on Jan. 15th, 1882, with deep black eschars over the lower part of the abdomen from the umbilicus downwards, and extending to the scrotum, penis, and both the thighs nearly as low as the knees. While in a state of extreme intoxication on the night of Dec. 30th, 1881, he fell down, and supposes that in his fall a box of fusees which he had in his trousers pocket became ignited and set fire to his clothes. He laid out in a yard all night; and it was only the following morning, on coming to his senses and witnessing the burnt state of his clothes, that he was aware of the serious accident that had befallen him. Carron oil was used to the burns, and gradually the sloughs cleared off; but in the process of cicatrisation, phimosis occurred to such an extent that he could scarcely pass his water. To remedy this condition, Mr. West performed partial circumcision after Demarquay's method on March 3rd. The three silver sutures used to retain the skin and mucous membrane in position were removed on the 10th, and union was perfect by the 14th, a fair amount of preputial covering of the glans being preserved.

The case is of some medico-legal interest, as showing what a grave injury may be inflicted on a man while under the influence of drink without his being aware of it, and of surgical interest, as exhibiting an uncommon cause for the production of phimosis.

SPINAL CARIES; PSOAS ABSCESS; INCISION WITH ANTISEPTIC DRESSING AND A SAYRE'S CASE.

(Under the care of MR. WEST.)

Ellen T——, aged twenty-six, single, servant, a tall well-made, muscular girl, was admitted on December 28th, 1881, under Dr. Sawyer, and transferred to Mr. West's care

on January 7th, 1882. On December 21st, 1881, she started to walk from London to Coventry. On the third day (December 23rd), when about eighty miles from London, she found the road flooded from the recent rains; she went through the water, which was nearly up to her knees; she was in it two or three minutes. When about eighty-six miles from London she found another part of the road in the same condition; this was, as she states, a quarter of a mile long; she says she was in this fifteen minutes. The water was half way up her thighs. She went through both these floods in one day, and her clothes dried on her on both occasions. She complained of the cold from that time and of rheumatic pains in her knees; and on arriving at Coventry, went to bed and remained there till she was brought over to Birmingham. On admission her left thigh was flexed on the abdomen and could not be straightened; she complained of pain in the left lumbar region when pressure or when a hot sponge was applied. A blister was placed over the loins, and iodide of potassium and bicarbonate of potash were given.

January 16th: Extension to limb reaching beyond the knee, with a weight of 21 lb., was applied, and salicylate of soda in ten-grain doses was ordered.

February 15th: The left thigh being much swollen, was punctured by Mr. West and found to contain pus just below Poupart's ligament, to the outside of the vessels.—18th: She was put under chloroform, and the cavity was freely opened below and to the outer side of the anterior superior spine, antiseptic dressing being employed. Over a pint of pus was evacuated.

March 16th: The antiseptic dressing was discontinued. Discharge greatly lessened, and the hardness above Poupart's ligament was much diminished. The circumference of the left thigh was nearly normal.—31st: A Sayre's plaster-of-Paris case was put on, and the patient was allowed to walk about.

On April 28th she left the hospital cured, and without any evidence of angular curvature of the spine.

In this case, cold and exposure had probably set up mischief of an inflammatory kind in the lumbar vertebræ; pus formed and came down the thigh in the sheath of the psoas muscle, and was eventually got rid of by free incision. Antiseptic dressing caused this treatment to be carried out without the production of any constitutional excitement, and the immovable plaster-of-Paris jacket enabled the patient to leave her bed and get about in a very short time.

ST. ALBANS HOSPITAL.

SIMPLE DISLOCATION OF THE ASTRAGALUS FORWARDS AND OUTWARDS; REDUCTION.

(Under the care of Mr. RIDGWAY LLOYD.)

ON July 27th, 1882, J. S——, aged forty-three, carpenter, whilst crossing the permanent way of the Midland Railway at St. Albans, slipped upon the metals, twisting his right foot inwards. He was at once removed to the hospital.

On examination it was found that the right foot was considerably inverted, the inner malleolus being so deeply buried in the sole as to be almost indistinguishable, whilst the outer one was exceedingly prominent; neither malleolus, however, was fractured. In front of the outer ankle was a prominence caused by the dislocated astragalus, which was subcutaneous and somewhat movable.

Chloroform having been administered, reduction was readily effected, the bone slipping into its place with an audible snap. The leg was put up on a Neville's splint for a few days, and at the end of nine days from the date of the accident the patient left the hospital, being then able to walk fairly well with the aid of a stick.

Remarks by Mr. LLOYD.—Mr. Bryant, in his "Practice of Surgery," vol. ii., p. 367, remarks that some cases of sub-astragaloid dislocation have been mistaken for dislocation of the astragalus, but the case recorded above certainly belongs, in my opinion, to the latter class, and this view is confirmed by my colleague, Mr. F. R. Webster, who saw the patient with me, and kindly gave me his assistance.

ROYAL COLLEGE OF SURGEONS.—The Library and Museum of this Institution will be closed this day (Friday) for one month; in the case of the latter the time will probably be extended owing to the extensive painting and repairs going on.

Medical Societies.

CAMBRIDGE MEDICAL SOCIETY.

AT the meeting on August 4th, Professor Humphry, F.R.S., President, in the chair,

Dr. BACON brought forward a case of Hæmorrhage into the Arachnoid Cavity in the person of a woman eighty-seven years of age, and exhibited the specimen. The patient was suffering from senile dementia, but was quiet and apparently in good health. One day she became faint and was helped to a sofa, but had no fall or injury. She became rapidly unconscious, and was at once seen by the medical officer. She never recovered consciousness, had contracted pupils, and died thirty hours afterwards. At the necropsy, the brain weighed from forty-one to forty-two ounces. Over the left hemisphere of the brain, on removing the dura mater, was found a layer of coagulated blood, in a semi-organised condition. There was a similar layer of currant-jelly appearance over the left half of the base of the skull, and extending over the right orbital plate. The cerebrum itself was apparently healthy, and the ventricles contained only a small amount of serum. No ruptured vessel could be discovered, and there was no fracture of the skull or sign of external injury. Dr. Bacon considered that there had been a former hæmorrhage, and that the recent one had proved fatal in accordance with the symptoms related. He mentioned the following cases in connexion with the subject as illustrative:—In Vol. X. of the *Journal of Mental Science* (1865) Dr. J. W. Ogle published two cases of arachnoid cysts occurring in general paralysis, one of which was contributed by him (Dr. Bacon), and remarks on the comparative rarity of such cases. In vol. xi. of the same journal will be found an interesting paper on the same subject by Dr. S. Wilks of Guy's Hospital. Dr. Wilks there approves the theory propounded by Mr. P. Hewett in vol. xxviii. of the Medico-Chirurgical Transactions, that these cysts proceed from a "chronic change in a previously effused blood," but in all the cases he gives the symptoms were of some duration.—Dr. PAGET had seen a case of a similar nature in which the symptoms lasted a few days.

Mr. WHERRY related a case of Gall-stones discharged through an Abscess in the Right Groin in a woman under his care. The patient had an obscure swelling in the right inguinal region. An exploratory puncture discovered pus too thick to flow through the cannula, but a free incision let out thick pus and over a hundred gall-stones. The finger passed into the wound in the direction of the gall-bladder. A large drainage-tube was then tied in the opening, through which gall-stones still pass. There was no bile and no fæcal odour. The patient had for several years been subject to attacks like ague. A year ago she first noticed in the right side of the abdomen a swelling, which enlarged painlessly until it could not be spanned by her hand. Her bowels were regular, and she had no jaundice. Two months later the swelling appeared, from her description, to burst inside her, and she was immediately seized with violent cramp-like pains in the right lumbar and iliac regions. The swelling diminished, and she had now attacks of vomiting of dark fluid every five minutes for five days, and during this time she ate nothing; but when the vomiting ceased she had a ravenous appetite, and was able to walk about. Altogether she had five similar attacks of vomiting, lasting from three to five days each, followed by several weeks of health. Mr. Wherry mentioned a case of three fistulæ from the gall-bladder, which led respectively to the duodenum, colon, and skin. A biliary fistula has been known to communicate through the open urachus with the urinary bladder. Gall-stones are reported to have been found in the right bronchus and in the portal vein. Cases of biliary fistulæ opening externally are said by Murchison to occur usually in women, and to be caused by gall-stones, and even when connected with cancer either worms or gall-stones are also found.—In reply to Professor Humphry and Dr. Paget, Mr. WHERRY said that he thought there must have been an abscess near the fundus of the gall-bladder into which the gall-stones were discharged after adhesions in the neighbourhood; that as there was no jaundice and no pain the inflammation was limited to the gall-bladder and cystic duct. No bile came through the external wound, and the patient had a prospect of complete recovery. Columbus

mentions that in the case of St. Ignatius Loyola a gall-stone was found in the portal vein, and an undoubted case has been recorded lately.—Dr. PAGET mentioned the case of a lady he had seen some years ago in a desperate state of illness, when there was great pain and tension of abdomen, and when an incision was made no less than 160 gall-stones escaped, though not all at once. In this case the patient recovered and lived for years. He referred also to another case in which the patient passed a big stone but died from cancer of the liver.

Mr. SHEILD related the case of a lad who had recently been treated in the hospital for Tetanus and recovered as follows:—A healthy country lad, aged seventeen, was admitted on the 30th May. He was suffering from an extensive lacerated contused wound on the flexor aspect of the left forearm, the result of the explosion of a gun. The wound was treated by poultices and carbolised oil, and all went well until June 17th, when symptoms of tetanus set in, with slight stiffness about the muscles of the jaws and of the neck. On June 19th these symptoms had become more pronounced, well-marked trismus was present, with epigastric pains. By June 23rd the disease was fully developed, severe spasms, especially of the muscles of the back, were constantly present, the tongue was foul and the breath offensive, the bowels were constipated, and the pulse quick, while the temperature was high and the urine scanty and high coloured. Excessive sweating was also present, so that an eczematous condition of the cutaneous surface was produced. On July 10th the disease was on the wane. Gradually the spasms grew less severe, the bowels acted naturally, and the appetite improved, while the patient was walking about the ward, with his wound nearly healed, and all tetanic symptoms were gone. The treatment adopted consisted chiefly of generous diet and good nursing. Hypodermic injections of morphia were administered every evening, when the anguish was severe, and caused relief and some snatches of sleep. The bowels were relieved by enemata, and during their peristaltic action the patient seemed to have his sufferings increased, but after the evacuation the pains were alleviated. He smoked tobacco twice, and this gave him some relief from the accumulation of mucus in the fauces.—Professor HUMPHRY had seen a great many cases of tetanus, and had arrived at certain conclusions respecting it. First, that it is a passing malady depending probably, like small-pox, scarlet fever, &c., upon some blood-poisoning, like them being amenable to no known curative treatment, but running a certain course and subsiding, provided it did not kill the patient in its course; that, like them, it is fatal in proportion to the acuteness and severity of its onset. Of the rapidly progressing cases very few survive, whereas in those which come on more tardily, and more particularly in those in which the patient continues to be able to take food, a favourable result may, by good management, not unfrequently be obtained. Secondly, that the disease is attended with much wasting and exhaustion, sometimes with high temperature, and that the most important feature in treatment is to give nourishment, which must generally be in a fluid form, milk, eggs, beef-tea, wine, &c., as much as the patient can take. While food can be swallowed there is hope. It must be urged upon the patient, who is often reluctant to take it, and no other treatment should be allowed to interfere with this. Sedatives, such as morphia hypodermically injected, tobacco, &c., come in as adjuncts more severe cases, but are better abstained from unless the case is severe; and reliance should be placed solely on the feeding, with attention to the bowels, it being generally necessary to give aperients. He had kept patients persistently under the influence of chloroform without any benefit. The maintenance of strength by nourishment, so as to enable the patient to tide over the attack, is the great thing to be aimed at.

Dr. INGLE exhibited a specimen of Cystic Disease of the Chorion. The fœtus in this case was probably eight weeks old, though stated to be five months. There was considerable hæmorrhage between the expulsion of the fœtus and that of the placenta. Dr. Ingle observed that in such cases the diseased state of the chorion may cause the death of the fœtus, though the ovum may be retained for some time longer. The special feature in this case was the abrupt termination of the cord at the amnion, while at another point of this membrane the vessels passed through to the chorion, and this point seemed to be the spot where the placenta originated.

HEALTH OF THE ARMY.

No. III.

THE Appendix to the Army Medical Department Reports, containing the professional papers, has just been issued, and is of special interest. The first paper is, as usual, the report on the progress of hygiene during the year 1880, by Professor De Chaumont. On the present occasion this is confined to a notice of the work of Societies, papers, reports, &c., but nothing is said of the legislation on the subject of public health, nor of the special work done at Netley, an omission which is to be regretted. Dr. De Chaumont, in his report, has given a translation of an important paper read before the Medical Society of Munich in April, 1880, by Pettenkofer, "On Cholera and its Relations to the Parasitic Theory," as being "the latest utterances of so distinguished an etiologist, and also because there is much in it that will be both interesting and profitable to medical officers of the public services." He has also brought to notice the facts connected with two outbreaks of typhoid fever—at Pemberton and Orrell in Lancashire, and Ystalyfera in Glamorganshire—with special reference to the question of the influence of the water-supply as the medium of conveyance of the disease. From the surgical division of Netley Hospital we have a list of operations performed during the year, with short abstracts of some of the more important cases, by Surgeon-Major Tobin. We observe with much satisfaction that a valuable paper has been contributed from the medical division by Brigade Surgeon Veale, the Assistant Professor of Medicine, "On Palpitation of the Heart in Soldiers." It would have added to the value of the paper if Dr. Veale had compiled from the records of the hospital a table showing the number of men sent home annually from foreign stations on account of this affection, and the proportion of these discharged as unfit for service. Perhaps he may be able to do so in the next volume, and also to trace whether any change has taken place in the way of increase or decrease contemporaneously with the changes in the organisation of the army. Dr. Veale has examined carefully a hundred patients who had been invalided for palpitation, taken, without special selection, from those who arrived at Netley during the last two years, "noting the antecedents both remote and immediate, the general symptoms, the physical signs, and the probable causes of the disorder, and concluding each examination with such a statement of the actual condition of the heart as a consideration of all the circumstances seemed to warrant." Upon the results of these examinations he has based his paper. We regret to observe that he has not given any of the sphygmographic tracings in these cases, nor do we find any reference to the evidence afforded by them beyond this, that "as a general rule the pulse was weak and of low tension, giving to the sphygmographic tracing a rather high percussion stroke and increased dicrotism." He has tabulated the antecedents of the men as to previous occupation, age, service—at home, within the tropics, and in subtropical climates,—arms of the service, locality where developed, alcoholic drinks, use of tobacco, diseases, and other immediate antecedents, such as marching on active service, overstrain from other causes, and fright. The value, however, of the information, on some of these points at least, is greatly diminished by the absence of any data as to the numbers living among whom the cases were developed. After giving an account of the physical signs, Dr. Veale observes under the head of diagnosis, "The conclusions arrived at with regard to these cases were that there was abnormality at the mitral orifice *without* marked hypertrophy or dilatation, in three instances; that there was abnormality of the mitral orifice, *with* ventricular dilatation, and either with or without compensating hypertrophy in six cases; that there was dilatation without compensating hypertrophy in 48 cases, in two of which there was probably dilatation or aneurism of the arch of the aorta; that there was dilatation with hypertrophy in 19 cases; and that in 24 cases there was no positive evidence from auscultation or percussion *per se* of either dilatation or hypertrophy.' He subsequently remarks—"The facts seem rather to indicate that palpitation in soldiers is generally a result and sign of a dilating process which has begun, and is progressing, either subsequently to hypertrophy or independently of and without it, or without a sufficiency of it. Very few, if any, of the cases

answer to the description of the neurosal form of palpitation, with the exception, perhaps, of those which are induced by excessive smoking. The patients are often not anæmic, they eat well, and appear to digest well, yet, on the least exertion, such as running or mounting stairs, the heart beats with extraordinary rapidity." It is this latter circumstance which renders the discharge of the men from the service a matter of imperative necessity. "A few of these patients, after prolonged rest and judicious treatment, may, perhaps, be sent back to the ranks, but they seldom recover thoroughly." Dr. Veale has given a summary of the ascertained or most probable causes of palpitation in the cases he has examined. Of these malarial fever ranks highest, followed by intemperance, heat of climate, marching on active service, exertion generally, excessive smoking, hardships on active service, and several minor causes. He does not consider that the pressure of the valise or of the belts now occupies a prominent place, as it formerly did, although it may still contribute. He speaks very decidedly of the injurious effect of excessive smoking, although he hardly assigns to it as high a place among the causes as we should be inclined to give it, especially when combined with drinking. But it is a cause which it would be extremely difficult to abate, though probably something might be done in the way of issuing less "villanous stuff" to the soldiers than they are in the habit of smoking. "The soldier loves his pipe, and its value as a 'carebreaker' may be, and I daresay is, very great; much caution would therefore be needed in any attempt to curtail this luxury, but in the meantime it would certainly be good economy on the part of Government to insist that such a deleterious substance as the 'twist' or 'stick' tobacco should never be sold in canteens, or issued to the troops on board ship, or in the field." If anyone doubts the injurious influence of this tobacco on the heart's action we recommend him to test it by taking the sphygmograph tracings of even an habitual smoker before and after indulging in a pipe of it. Dr. Veale discusses at some length what he terms "the extraordinary but very general delusion respecting the advantages of flannel underclothing," and he considers the use of it in the tropics to contribute to cardiac disease. We are not disposed to accept his views in opposition to those of almost every medical officer of experience in the Service, and we fail to find in his remarks anything which would lead us to change our opinion on this subject. With the exception of this "delusion," the paper is one which, though on some points defective, is well deserving of study. We trust that Dr. Veale will continue his observations on the subject, and that on a future occasion he may be able to supply the information now wanting.

Dr. Aitken has furnished some brief observations on a case of fractured femur and embolus, which we hope are but the commencement of a series of papers turning to account the great opportunities offered by Netley for pathological investigation.

We have been much disappointed to find that the promised general medical history of the two Afghan campaigns of 1878–79–80 has not been included in this volume. Dr. Crawford's special report on the hospital organisation of these wars, which we noticed when it was sent home as an official memorandum from India, is reprinted; but this does not profess to be a history of the medical and surgical occurrences of the campaign. Dr. Marston's valuable remarks on enteric fever in India are also reproduced; but, as we have already fully noticed both of these papers, it appears unnecessary again to comment upon them. (See THE LANCET of Sept. 24th and Dec. 3rd, 1881.)

There is an interesting report of the Medical Transactions for Natal and the Transvaal during the Boer rebellion of 1880–81, by Deputy Surgeon-General Holloway, C.B., covering the period from Dec. 16th, 1880, when the Boers proclaimed the republic, till March 12th, 1881. There are also reports by the medical officers in charge of the various stations where our troops were besieged, and one by Surgeon-Major Babington of the action at Amajuba Hill, where he was senior medical officer. We cannot enter into the details of these various reports, but will merely note one or two points. At Amajuba Hill the force engaged consisted of 25 officers and 403 non-commissioned officers and men. Of these 3 of the former and 83 of the latter were killed, and 10 and 130 respectively were wounded. During the whole of the Boer war 15 officers and 283 men were killed, and 52 officers and 511 men wounded; of the latter, 10 officers and 69 men, including those of the Naval Brigade, died of their wounds. The details of the strength are not given sufficiently to enable us to state accurately the proportion of the loss in each class. The wounds admitted into the hospital of the Natal Field Force were classified as follows:—Upper extremities, 113; lower, 108; chest, 28; back and spine, 18; abdomen, 13; face, 9; head, 8; neck, 4; direct injury of large arteries, 2; with direct penetration or perforation of large joints, 9. Of the chest-wounds 8 died, and of those of the abdomen 7; 6 primary and 29 secondary amputations were performed, with 8 deaths. A detailed account is given in a tabular form of the capital operations, and the nature of the injury for which each was performed. Mr. Holloway speaks in the highest terms of the manner in which the medical officers discharged their duties. It is satisfactory to know also that "at no time was there a want of any medical or surgical appliance experienced during the campaign." Dr. Babington has given a report of the circumstances under which the two lamented officers, Surgeon-Major Cornish and Surgeon Landon, were mortally wounded when fearlessly doing their duty.

We have hitherto confined our notice of the volume to the portion relating to the sickness and mortality, but there are other points of importance treated in it. The returns of vaccination among the recruits inspected by military medical officers show that 924 per 1000 bore marks of vaccination, 28 marks of small-pox, and 48 no satisfactory mark of either. In 558 primary vaccinations the proportion furnishing a perfect vesicle was 50 per cent., a modified pustule 27 per cent., and a failure 23 per cent. In 22,721 cases of revaccination the results per 1000 were 417 perfect, 338 modified, and 245 failures. The proportion of failures on revaccination by means of preserved lymph was double that done from arm to arm. Throughout the army at home and abroad there were only 20 cases of small-pox and three deaths in the year.

There were 46,108 recruits inspected for the army in 1880, and the proportion of these rejected as unfit for service was 374 per 1000 on primary and 34 on secondary inspection, making a total of 408. This is considerably above the average, but has probably been the result of an abundant supply of candidates, which has enabled the medical officers to carry out the regulations more strictly. As in former years, the ratio of rejections by army medical officers has been much higher than that by civil practitioners. Upwards of one-fourth of the rejections was on account of the recruits being "under chest measurement," amounting to 111 per 1000 examined; the causes next in frequency were defective vision, which gave rise to 48, and "under weight, muscular tenuity and debility" to 30 rejections per 1000. There is one unsatisfactory point in the recruiting returns of the year as compared with those of 1879—an increase in the proportion of recruits under nineteen years of age, in those under 5 ft. 4 in., and in those under 120 lb. in weight, but these are still considerably below the average of the five years 1860–64 (*vide* THE LANCET, Oct. 15th, 1881). The state of education among the recruits examined by military medical officers was: Unable to read, 139 per 1000; able to read but not write, 94; able to read and write, 767. There is no information available respecting those inspected by civil practitioners. There is, fortunately, now in the army an effective staff of regimental schoolmasters to make good the deficiencies in the education of the young soldier.

We cannot close this notice of the departmental volume without expressing our gratification at finding a deficiency to which we alluded last year remedied, and that all the branches of the Netley school are represented this year by papers from either the professors or assistant professors. It would indeed be far from creditable if the great opportunities of acquiring and disseminating special knowledge were not turned to account by men of the high standing and acknowledged reputation of those who constitute the staff of that valuable national institution.

THE sum of £150 is offered to the Rational Dress Society, to defray the expenses of an Exhibition of Rational Dress to be held in London during the coming winter. A Prize of £30 will be given for the dress which best accords with the following requirements:—1. Freedom of movement. 2. Absence of pressure over any part of the body. 3. No more weight than is necessary for warmth, and both weight and warmth evenly distributed. 4. Beauty and grace, combined with comfort and convenience. 5. Not departing too conspicuously from women's ordinary dress.

THE LANCET.

LONDON: SATURDAY, SEPTEMBER 2, 1882.

LAST week we published the medical report on the health of the crew engaged in the late Arctic Expedition of Mr. LEIGH-SMITH, for which we were indebted to the courtesy of Mr. W. H. NEALE, M.B., M.S., medical officer of the *Eira*. We were, however, prevented at the time from giving the interesting details the full consideration that they deserve; the most remarkable feature being the singular absence of disease amongst a crew of twenty-five men during a sojourn of fifteen months in arctic regions, exposed to great hardships and anxiety. This circumstance reflects the highest credit on the medical officer of the expedition, for it is undoubtedly to his attention to the hygienic and sanitary arrangements during the period the crew were cast on Franz Joseph Land that this satisfactory result must be attributed. It is another instance proving the truth of the observation made as long ago as the time of Captain COOK, that only by an unremitting attention to food, cleanliness, and ventilation, and an early administration of antiscorbutic provisions and of medicines, together with attention to the personal habits of the crew, is it possible to preserve the health and lives of seafaring people on long voyages. It is, as VANCOUVER well remarked, to the attention paid to these principles that Great Britain is in great measure indebted for her present exalted position amongst the nations, and the extension of her commerce through every sea. Unfortunately, however, from time to time expeditions, military as well as naval, have been undertaken without a due regard to the principles enunciated by the great circumnavigator, and these have always ended in failure, more or less disastrous.

Mr. NEALE notices the interesting fact that when the men first began to eat the walrus and bear flesh nearly everyone suffered from diarrhœa, and some of them became very weak. FRANKLIN, in his "Narrative of a Journey to the Polar Shores in 1821-22," frequently records the fact that after obtaining supplies of fresh meat the crew were inconvenienced by bowel attacks, the first alvine discharges being accompanied with excessive pain. On one occasion the men were much more languid and disinclined for exertion than they had been on their previous short commons. FRANKLIN attributes these attacks to the men eating too heartily after having been on a very restricted diet for a long period. This, however, was not the case with the crew of the *Eira*, as they never seem to have suffered actual deprivation. It is therefore a question of interest to determine whether this diarrhœa was the result of passing from salt and tinned provisions to an abundant supply of fresh and recently killed food; or whether walrus and bear flesh, like pork, has a tendency to produce diarrhœa when too freely ingested.

The most interesting of Mr. NEALE'S observations, however, is that which relates to the absence of any symptoms of scurvy among the men—a fact which has led him to express the opinion that if men live on the flesh of animals indigenous to the country, even without vegetables, they will run very little risk of scurvy, so that under such circumstances lime-juice is not of much use. Curiously enough, while Mr. NEALE is detailing his experience with regard to the prophylactic value of fresh meat against scurvy in the arctic region, Dr. LUCAS writes to us from India, stating that the meat-eating tribes of the north-west provinces are comparatively free from scurvy, whilst the vegetable-feeding tribes are not unfrequently attacked with the disease. This experience of both arctic and tropical observers, which does not stand alone, is so entirely distinct from European experience that some solution of the apparent paradox is required. In a letter which we publish in another column, a correspondent points out that the statements of Mr. NEALE and Dr. LUCAS need not be considered as in any way upsetting our established views with regard to the disease, since, as he urges, meat is probably a scorbutic and an antiscorbutic article of diet according to the period of time that elapses from the time of slaughter to the period of cooking. Fresh muscle, as is well known, has an alkaline reaction, due to the presence of the neutral sodium phosphate; after rigor mortis has passed off the reaction becomes acid, due to the development of lactic acid,—the neutral phosphate is thus converted into acid sodium phosphate. In hot countries the meat is eaten so freshly killed that lactic acid is not developed; in arctic regions the cold stops its formation; in European countries, where meat is usually hung, there is ample time for its generation. Thus in tropical and arctic regions the muscle plasma is alkaline when cooked, in European countries acid. If therefore it be true that scurvy is produced by a diminution of the alkalinity of the blood—a view originally put forward by GARROD and subsequently confirmed and extended by Dr. RALFE,—then we can conceive how fresh meat may be antiscorbutic, whilst hung meat will have an opposite quality. Lastly, Mr. NEALE is to be thanked for his suggestion of the use of blood as an antiscorbutic. If its employment on future occasions should further prove its prophylactic value with regard to scurvy, we shall expect to see it extensively used by our mercantile marine, whilst under any circumstances it introduces to the notice of travellers and voyagers a food at once portable, nutritious, and wholesome.

THE events now occurring in Egypt make any facts bearing upon the health of troops in that country interesting, and a notice of some of the special features of the climate and its influence upon military surgery made by so acute an observer as Baron LARREY may be considered timely. His Mémoire refers to NAPOLEON'S campaigns in the years 1798 to 1801, and is full of interesting facts and observations. He had at first to meet with difficulties with which our own military surgeons are not unfamiliar, for when he arrived in Alexandria in 1798 he was unprovided with all necessary stores, the ship in which all that he had carefully collected was contained having been seized by the English in its passage. While waiting at Alexandria the French soldiers suffered greatly from the stings of scorpions, which LARREY speaks of as more alarming than really dangerous; he easily cured them by bathing the part with sea-water or with acid or alkaline lotions.

During a five days' march across the desert to Damanhour, without provisions and without water, the army suffered

terribly, and many died. LARREY specially comments on the absence of all pain in the fatal cases, and the calm that came over them before death; stimulants appeared to be of great benefit to those suffering from extreme exhaustion. Egyptian ophthalmia seems to have been the first affection to arrest LARREY'S special notice. He describes the course and symptoms of the malady fully and carefully. He attributes the disease to the combined effects of bright sunlight, dust in the air, sudden changes in temperature, especially cold damp nights succeeding to hot dry days, the suppression of sweating, alcoholic and sexual excesses, and the sudden suppression of diarrhœa or gonorrhœa. Fair men were found to be more subject to it than were the dark. The treatment he adopted was to commence with bleeding and leeching, and anodyne fomentations, followed by astringent lotions, such as solutions of sulphate of copper, bichloride of mercury, and acetate of lead. The prophylactic measures he recommends are: the avoidance of direct sunlight on the eyes, which should also be protected from dust; to keep the whole body covered at night, with a bandage over the eyes; to avoid damp and marshy places; and to keep up the cutaneous transpiration by baths and exercise. He further recommends taking coffee, the avoidance of spirituous liquors and indigestible food, and states that the eyes and head should be frequently bathed with warm water and vinegar.

After the battle of Sedment LARREY had many cases of tetanus, some of which he quotes. He observed that it most often occurred under sudden and extreme changes of temperature, and in damp situations near the Nile or the sea. Men of a nervous irritable temperament were especially subject to it. The treatment he found most useful consisted in the internal administration of opium, camphor, and nitre, in almond emulsion; externally, the application of blisters to the wound to excite free suppuration; the division, above the wound, of the trunks of all the nerves implicated in the injury or operation; and especially amputation, when the wound was situated on a limb. He asserts that emulsions are swallowed more easily than anything else by patients suffering from tetanus.

In 1799 the plague broke out and made great ravages amongst the troops. LARREY resorted to prompt measures for isolation and disinfection, and obtained satisfactory results. He issued a circular to the army surgeons in which he recommends the treatment he had found most successful—viz., to apply wet cups to the back of the neck and follow them by an emetic, to open and keep open the bowels, and to give bitter infusions and decoctions. Locally, for abscesses he advised poultices, rubefacients, and caustics, and free incisions when pus had formed. When carbuncles formed it was necessary to make deep incisions and remove the sloughs as completely as possible. The great safeguards against the disease he stated to be cleanliness, frequent cold ablutions, and washing of the clothes. He especially condemned as very dangerous the practice of sleeping in pits dug in the earth. The disease prevailed only when the wind blew from the south.

On the return of the army to Egypt after the campaign in Syria a new enemy was met with in the form of a variety of leech that abounded in pools of fresh potable water. These leeches, a few millimetres long, the size of horsehair and black in colour, by attaching themselves to the pharynx caused great annoyance; when fully distended with blood they attained the size of a common leech. The symptoms produced by these parasites were pricking pain, cough, bloody expectoration, dysphagia, and dyspnœa. At times they were seen attached to the pillars of the fauces, or even lower down the pharynx, but a rather favourite site appears to have been the top of the pharynx behind the soft palate. They were detached by gargles or injections of salt or acid water, or by forceps.

After the battle of Heliopolis and the siege of Cairo in 1800 there was an outbreak of yellow fever among the wounded soldiers, which proved very fatal. It occurred during the prevalence of the hot south wind in the day followed by damp cold nights, and seized mainly upon the less robust of the troops. The wounds of these patients so often and so early became gangrenous that LARREY for a time suspected that the Turks were using poisoned bullets. The prevalence of hepatitis and abscess in the liver likewise arrested LARREY'S attention, and in his article on this subject he especially insists on the great value of free incision into the abscesses when well declared, and he gives some cases showing the excellent results of this practice. Another interesting observation of LARREY'S is the occurrence of atrophy of the testicles in many of the soldiers of the army of Egypt in the year 1799, who noticed after their return to France a gradual painless wasting of these glands, accompanied when both glands were involved by the loss of all sexual desire and power. This occurred quite apart from any previous venereal disease. In most cases only one testicle was affected. This atrophy was accompanied by other signs of disease—wasting and debility of the lower limbs, failure of digestive power, discolouration of the face, thinning of the beard, and intellectual derangement. LARREY attributes the atrophy to the effects of great heat combined with fatigue and privations, and especially to the use of eau de vie prepared from dates, to which the fruits of Solanaceæ were added. When the atrophy was only commencing it might be prevented by vapour baths, dry frictions, stomachics, and good food. Leprosy and elephantiasis are well described, and the differences between the two are clearly pointed out. LARREY was greatly interested in elephantiasis scroti, and demonstrated the fact that amputation was the sole surgical resource. He calls the affection sarcocele, and gives as its causes sitting occupations, the wearing of loose Egyptian trousers, and "degenerated" syphilis. In regard to syphilis, he states that he found the disease to be mild and very easily cured in Egypt, but all forms of inunction were harmful; and if patients returned to France with the disease still uncured it became very intractable. It is interesting to note that while at Cairo, being greatly impressed with the ravages of the disease, he appealed to the Commander-in-Chief to establish a civil hospital in which all prostitutes found to be infected were detained till cured, and all discovered to be pregnant were also detained to prevent their procuring abortion. A strict inspection of the men was also made, and all affected with venereal diseases were kept in hospital. These measures were crowned with complete success.

Wounds were found to heal with great rapidity, and many cases of very severe injury in which recovery ensued testify

to the general salubrity of the climate. This was especially the case during the prevalence of the north winds, and was so marked that LARREY frequently mentions the fact. It was observed that gunshot wounds of the arm, causing fracture of the humerus, were nearly all followed by false joint. In cases of penetrating wounds of the lung he departed from the practice usual at that time, and closed the external wound, laid the patient on the injured side, and enjoined strict rest, and his results were very good.

LARREY observed with interest that although dogs abounded in the Egyptian cities, there was no hydrophobia among them. Camels, however, suffered from a form of madness during the time of rut, and bites from them in this state were dangerous, but the disease was not contagious. The symptoms were the escape of an abundant thick saliva, constant bellowing, horror of water, wasting, fever, falling off of the hair, and bad temper, which showed itself by their pursuing men and other animals. If excited, the symptoms increased, and often ended fatally. Horses were subject to ophthalmia like the men, but this could be prevented by shutting up the stables during the cold damp nights.

The last scourge of the troops was scurvy, which broke out in 1801, and, owing to its being thought to be contagious, produced great alarm. This mistake LARREY quickly corrected in a circular, addressed to the military surgeons, in which he points out that the disease was caused by the want of fresh meat and vegetables, the predisposing cause being a nearly constant humidity of the air after the overflow of Lake Màdjeh. Over 3500 cases of scurvy were received into the hospitals at Alexandria, of whom 272 died, exclusive of six or seven who lost their lives while returning to France. During the prevalence of scurvy there was hardly any plague, and the Egyptians had observed that when small-pox was epidemic there were very few cases of plague.

IN a recent article in the *Globe* it is stated that "the Army Medical Department can hardly be in a satisfactory condition, as far as numbers are concerned, when a little war like the present drives the authorities into employing civil practitioners at the cost of 17*s.* a day. And yet this is the present condition of affairs at most of our military centres. What would be the state of things, we wonder, if a second corps d'armée had suddenly to take the field?"

It can hardly be supposed that a department like the Army Medical Service ought in time of peace to be kept up to a war establishment. The country would not care to incur the very heavy expense involved in such a proceeding unless upon the plea of urgent and imperative necessity, and it would certainly be an act of most unnecessary extravagance. One of the objects which the Government had in view in the recent reorganisation of the department was to have a corps of efficient, well educated medical officers employed in taking care of the soldiers in time of peace, under such conditions that they could be mobilised at once if their services were required in the field. And the events connected with the present campaign have most fully justified the steps then taken. On the outbreak of hostilities a sufficient number of medical officers for the force employed was at once available, and there was neither delay nor difficulty in despatching them to the field when their services were required. As a matter of course, their place at home must be supplied, but this also had been foreseen. It was considered by those most competent to judge that it was of the greatest importance to send well-qualified officers, having practical experience of soldiers, to the front, and to supply their place at home, temporarily at least, by obtaining the services of civilian practitioners. To what extent it has been necessary to do this we are not aware, but if a second corps d'armée were, as our contemporary has suggested, suddenly called to take the field, we have no doubt the Army Medical Department would be able to supply the requisite number of surgeons, and would replace them in charge of the troops at home by the aid of the civil branch of the profession. If this has been done "at the cost of 17*s.* a day" for each officer removed, we can only say it has been a very satisfactory arrangement for the country. Were a higher rate of remuneration necessary, and at some of the larger stations where there is a considerable body of troops it probably would be required, we still think it would be much more economical than keeping up in times of peace an establishment sufficient to meet the possible demands of war, and more judicious than maintaining permanently a large number of half-employed officers, who would be undergoing a progressive deterioration in their professional knowledge from want of opportunity of keeping it up, and in their moral and social habits as a consequence of their enforced idleness. The arrangements of the medical service have up to this point been very satisfactory, and we have little fear that they will continue to be so, even though it may involve a considerable outlay. If we are to go to war we must be prepared for a liberal expenditure of money, and surely that which is incurred to keep our soldiers efficient in the field, and to afford them prompt and skilled assistance when wounded or struck down by disease, is the least likely to be grudged by the country.

THE sad fatalities which have attended the boating and bathing season this year have attracted attention to the best means of restoring animation to those apparently drowned. Considerable improvement has been made upon the rough-and-ready method in vogue in the Royal Navy at the end of the last century, which consisted in rolling the body to and fro over a cask, tying it by the legs with the head downwards, and the employment of other rough methods with the object of disgorging the water. LIND, who was physician to Haslar Hospital in 1774, endeavoured to introduce a more humane, and certainly a more scientific one, since he directs that air moderately heated should be pumped into the lungs by means of bellows; whilst a "gentle alternate pressure and dilatation of the ribs, with a corresponding alternate compression of the contents of the belly upwards, imitate as nearly as possible the act of respiration in the living body." To MARSHALL HALL, however, belongs the undoubted credit of devising and successfully introducing a method of treatment for restoring the apparently drowned at once practical and scientific. Dr. SILVESTER improved upon this by adopting the plan of alternately raising and depressing the arms, by which a greater amount of air is admitted into the thorax. Lastly, Dr. HOWARD, of New York, has introduced a system which has recently been investigated and reported on by the Royal Medical and

Chirurgical Society on behalf of the Royal Humane Society. Dr. HOWARD'S method, in its essential details, resembles that proposed by LIND, in the alternate compression and dilatation of the ribs, &c. No doubt, in skilful and well-trained hands, Dr. HOWARD'S method proves a most successful agent in the recovery of the apparently drowned, but it requires some skill to direct efficiently and effectually the alternate movements of the chest walls, whilst rough and unskilful operators might cause injury to the abdominal viscera. SILVESTER'S method is free from these objections; it is easily practised, and there is no manipulation of the body. In the experiments of the committee of the Royal Medical and Chirurgical Society it was shown that more air passed through the lungs by simply raising and depressing the arms (SILVESTER'S method) than by the compression of the lower part of the thorax (HOWARD'S method). Nevertheless we think a combination of the two methods would give the best results. HOWARD'S plan of emptying the stomach, and perhaps the lungs, of water is the best yet devised, whilst gentle alternate compression and relaxation of the lower end of the thorax is a valuable supplement to the effect obtained by the alternate elevation and depression of the arms. In no case, however, should that procedure be omitted. One point, however, with regard to the restoration of the apparently drowned should not be forgotten—namely, that the asphyxia will very often recur if the patient after apparent recovery is allowed to get up and walk home too soon after his return to animation. In dealing with the question of the preservation of life from drowning, the old adage, "prevention is better than cure," occurs to us with its usual force. We are unable to quote offhand the statistics which show how many lives would have been spared had the victims of the fatality been able to swim—we believe it has been stated at more than one-half,—whilst a considerable number of those unable to swim would have been able to save themselves had they had appliances within reach. Considerable attention has of late years been paid to the construction of life-saving garments, and these can now be fitted for ladies' jackets, capes, and corsets, for gentlemen's vests, pea-jackets, and oilskins. For ladies in the habit of boating WENTWORTH'S sleeved corset might be recommended not only as a useful article for the purpose for which it is designed, but also as "æsthetic" in appearance. The use of a preserving article of dress may turn the scale in favour of life in many a shipwreck or collision; since it often happens that if persons can keep afloat only a few minutes they will be rescued, whilst those who may be cast on shore after shipwreck will certainly be less likely to receive injury from the violence of the waves if the abdominal and thoracic cavities are encased in the elastic armour these belts afford.

To take a tracing from the radial artery with the sphygmograph is not always a very simple matter, but its difficulties are far slighter than are those which present themselves when the tracing is to be interpreted. Up to a certain point the task is easy and the conclusions open to little doubt; beyond this, however, there is much uncertainty regarding the precise significance of the lines and curves which constitute the self-written record of the labouring heart. Even some of the fundamental principles are still undecided, and the positive assertions of one authority are met by the contradictions, equally positive, of another. Under these circumstances, it is worth while to direct attention to an original study of sphygmographic principles which has been made by a German physician, Dr. GRASHEY, and described by him in a volume published at Leipzig. His conclusions are not in the main new, but they corroborate and extend previous results, and have in some instances been reached by methods more exact than those employed by some of his predecessors in the same work.

Commencing his investigation with an inquiry into the accuracy of MAREY'S sphygmograph and its modifications, which still, in spite of the energy of inventors, constitute our most trustworthy instruments, he soon arrived at the conclusion that, while slow movements are recorded with accuracy, quick movements are registered in exaggerated extent. He has determined at what point the inaccuracy commences. As long as the maximum rapidity of movement of the writing lever is under 90 millimetres per second the register is accurate; but when the rapidity exceeds 120 millimetres per second the record shows a movement too extensive: the writing lever rises from the fulcrum, which it should follow accurately, and then falls again, so that we have a rise and fall, instead of a slighter rise followed by a horizontal line, the fall and the corresponding part of the rise being purely artificial. Artificial oscillations may thus have their origin in the instrument; but they may also be produced by an elastic tube if this is used to convey the impulse from the source to the register, and GRASHEY has determined the point at which the recoil of the tube introduces an artificial element in the resulting tracing. It is met with when the movement of the wall of the tube has a rapidity of seventy-three millimetres per second. These artificial oscillations modify the tracing at the upper end of the up-stroke of the lever, and not in the course of the up-stroke; and, similarly, other oscillations of like origin occur at the end of the down-stroke, but not in its course.

These facts having been ascertained, GRASHEY next investigated the simple wave-movements of elastic tubes. The method adopted by LANDOIS for the production of these movements consisted in the sudden constriction of the vessel at one spot, but this involves a source of error, since the wave thus produced, positive or negative, is preceded by a slighter wave of the opposite character GRASHEY, to obviate these, produced a positive wave by opening a stopcock, and a negative one by suddenly allowing water to escape from the open mouth of a tube in connexion with that to which the sphygmograph was applied, or by the sudden interruption of a current flowing continuously through the tube. Care has to be taken to avoid the complicating effect of reflected waves, which, if the tube be short, may pass through it more than once. From his experiments on this subject he arrived at the following conclusion. In a completely closed tube, a primary wave is transformed into a reflected wave of the same character. In a completely open tube, the reflected wave is of the opposite character to the primary wave. In tubes which are partially open, each primary wave is transformed into two reflected waves of opposite characters. If a second tube is attached to the primary tube, each being filled with water, and a wave is sent from one to the other, a part of the primary wave is reflected from the junction as a wave

of the same character, provided, with equal extensibility, the area of the second tube is smaller than the first, or provided, with equality of area, the extensibility of the second tube is less. If, on the other hand, the second tube is wider, but of the same distensibility as the first, the primary wave passes on, but causes a reflected wave of opposite character from the point of junction, and this wave is so much the larger the more the second tube exceeds the first in area and extensibility. The laws which regulate the movement of waves upon the free surface of water, as regards intersection, intensification, and diminution, obtain equally for waves within a tube. Moreover, a wave set up in a ramifying tube passes into all its divisions.

Applying these considerations to the physiological phenomena of the circulation, GRASHEY points out that each systolic positive wave will be followed by two negative waves. One of these, the "first diastolic depression," is that which occurs at the termination of the flow of blood from the ventricle into the aorta. This really occurs during the systolic interval, since the flow of blood ceases some time before the relaxation of the ventricle. The second diastolic wave coincides with the end of the systole. If, however, as is sometimes the case, the systole is imperfect, and the ventricle is not completely emptied, the cessation of flow occurs at the same time as the end of the systole, and these two negative waves will coincide. The second diastolic depression is, of course, immediately followed by the positive wave, which is produced by the closure of the aortic valves, and to which is usually ascribed the rise which interrupts the down-stroke of the tracing. These four waves pass centrifugally along the vessels, and at each division will give rise to reflected waves, of the same or of opposite character, according to the laws already mentioned. The resulting "interference waves" have, according to GRASHEY, an important influence on the phenomena of dicrotism. Other things being equal, the dicrotic wave will be highest when the ventricular systole is short and imperfect, and the cessation of the flow of blood coincides in time with the cessation of the ventricular pressure, and the wave will be least when the interval between the two events is greatest. Moreover, heterogeneous reflected waves will increase the degree of dicrotism, and homogeneous reflected waves will lessen it. But heterogenous reflected waves tend to occur if the arterial twigs are dilated and extensible, in consequence of the lessened vascular tone, which entails a fall in the blood pressure, as in fever. Hence it is intelligible how a short primary wave, diminished tension, with normal elasticity of the vascular wall, increase the amount of dicrotism.

WITH a view to increased efficiency in the sanitary administration of the Province of Ontario, a Provincial Board of Health has been established. The Act constituting the Board provides that it shall consist of seven members, including the secretary, and in view of the fact that the Board is to take cognisance of the interests of health and life among the people of the province, it is enacted that at least four members of the Board shall be duly registered medical practitioners, and that the secretary shall be the chief health officer of the province. The Board is required to make profitable use of the collected records of deaths and of sickness among the people, to make sanitary investigations into the causes of disease, and the origin and prevention of epidemics, to advise the Government in regard to public health, and as to the best methods of improving health by means of such works as drainage, water-supply, the removal of excreta, heating and ventilation of dwellings, &c. Where necessary the Board is authorised to make special investigations on oath, and it is also required to keep an adequate supply of vaccine matter. Under the same Act municipalities and local boards of health may provide means for the isolation of the infectious sick, and provision is made for the removal of patients to the hospitals so provided. In this respect the Act is in advance of our Public Health Act, for it distinctly enacts that the health authority, or their officers, may isolate any person suffering from a disease dangerous to public health, and this without the qualification which in our own Act has so often proved a source of hindrance—namely, that the patient must be without proper lodging and accommodation. The Ontario Act in this respect recognises the importance of protecting the health of the public, whilst the English Public Health Act, as generally construed, deals rather with the necessities of the patient. The Provincial Government have also settled the question of the compulsory notification of infectious disease in a manner which would certainly not have gained favour in the mother country. Not only is every householder obliged to give notice to the local board of health, or to the health officers of the district, when any member of his family is found to be suffering from a disease dangerous to the public health, but any physician called in to such a case is bound immediately to give a similar notice. Failure to report is punishable by a fine, and no fee for notification is provided for.

The new Provincial Board of Health has already shown itself in earnest. It has issued a series of notices to municipalities and public bodies calling attention to its own and to their powers in health matters. It has circulated amongst school teachers, ministers of religion, and others very valuable advice on the prevention of epidemic disease, and it has asked for information from the various authorities as to the existence within their respective districts of by-laws as to the construction and position of wells, privies, waterclosets, drains, &c., as to scavenging and other matters. So desirous is the Board of acquiring all available information as to disease prevalence, that it has prepared a series of cards on which medical practitioners are asked week by week to fill in the sickness records of their practices together with certain other information. This information, like that relating to infectious disease, will, it is evidently expected, be given without any fee, and we are bound to confess that in this respect the Board is expecting too much of the medical profession. That the information asked for is wanted in the interests of public health we do not for one moment doubt; indeed the lack of proper sickness returns is now universally recognised as a serious want in connexion with sanitary administration. But a public want should be met out of the public funds, and it is clearly unreasonable to ask that members of a busy profession should at the sacrifice of much valuable time, and without any fee or reward, supply a public body with information which will need to be carefully compiled. In England, medical officers holding Poor-law appointments are required, in virtue of their official

position, to supply such information, but it has never been so much as suggested that a similar demand should be made of private practitioners. Indeed we know of no other profession to whom any such request would be made. One other very important initial step has been taken by the Provincial Board. It has deputed Dr. COVERNTON to visit this and other European countries with a view of learning the experience of the older established State Boards of Health. Dr. COVERNTON has spent some time in this country; he will attend the International Congress of Hygiene at Geneva in his official capacity, and it is evident that he will carry back with him abundant materials for aiding his Board to arrive at decisions with regard to their future course of action. It would be well if our own Central Health Authority were in this respect to follow in the wake of the new Canadian Board. The experience of other countries, and especially that of some of the National Boards of Health of the United States, would, if it were acquired and properly compiled by skilled officers with a view to its being made use of in this country, afford in many respects most valuable aid to efficient sanitary administration.

Annotations.

"Ne quid nimis."

HEALTH OF H.R.H. THE DUKE OF ALBANY.

IT is with great regret we hear of the illness of His Royal Highness the Duke of Albany. Prince Leopold is known to suffer from constitutional weakness, with liability to hæmorrhage—hæmatophilia. Of this malady he has recently had an attack. Hæmatophilia ten years ago had no place in the College of Physicians' "Nomenclature of Diseases." The malady is interesting for several features other than the tendency to spontaneous hæmorrhage, or to bleeding from slight traumatic causes; such, for example, as the great proclivity to painful swelling of the joints, dependent or not upon injury, the fact of the morbid condition being in many cases congenital, and its hereditary transmission, to males especially. All these points have been fully dealt with by writers, but it may be useful to say a few words about them again here. The joint affection was well illustrated in a case communicated to the Clinical Society by Sir William Jenner during his presidency. (THE LANCET, November 18th, 1876, vol. ii., p. 716.) Sir William, in the course of his remarks on the case, spoke of the joint affection in hæmatophilia as being of three varieties—viz., a spontaneous swelling, with tenderness and but little effusion; large effusion, with or without hæmorrhage; and serous effusion simply, this last being the rarest. The occurrence of blood in the cavity of the joint does not appear always to be related to traumatism, but the great liability to severe joint affection following slight injuries accords with the similar proneness to cutaneous hæmorrhage. As to the nature of this remarkable condition, everything points to its being dependent on some congenital defect in the vascular system, not necessarily inherited, but at the same time most liable to be transmitted by inheritance when once it appears. Such observations as have been made on the blood do not show much marked alteration in its constitution. Sir Wm. Jenner, speaking on the occasion to which we refer, seems to have thought the blood was slow in coagulating, but this alone cannot explain the liability to hæmorrhage. Another fact, also alluded to by Sir Wm. Jenner, is that the bleedings occur often when the patient is most healthy; and he believed that in these subjects blood is formed rapidly, and there is a tendency to plethora of the smaller vessels. The most important fact of all, however, is that which concerns heredity in this disease. In its proneness to be transmitted by inheritance hæmatophilia occupies a foremost place, and this fact of itself seems to show that its nature is rather a defect or abnormality in development than an actual morbid process.

It may be hoped that the present indisposition of the Duke of Albany is not of serious character, and that His Royal Highness will make a good recovery; but it is abundantly evident that the avoidance of any considerable exertion must be continued for some time to come, and the Duke will need to regard himself as an invalid. Since his marriage His Royal Highness has made a laudable and highly appreciated effort to assume a full share of those toils of State which, in England, have for many years devolved on the younger members of the Royal family. Treading in the footsteps of his illustrious and lamented father, Prince Leopold has striven to fill the place the untimely death of the Prince Consort left vacant in the patronage and encouragement of science, art, and literature; a place and work of light and leading which Prince Albert created for himself, and by which he conferred inestimable benefits on important, perhaps the most important, classes in this country. The Heir Apparent has done much to carry on the truly philanthropic enterprise originated by his Royal father, but, looking to the arduous task which circumstances have combined to thrust on the Prince of Wales, it was impossible that his Royal Highness should make a specialty, such as the late Prince Consort made, of the encouragement of art and letters. The Duke of Albany, whose personal tastes are of a scholastic character, has with marked and admirable energy devoted himself principally to this work. The state of his Royal Highness's health clearly necessitates more than ordinary caution in the expenditure of strength. The care which the Duke of Albany is receiving from those about him is likely to carry him safely through the present trouble, and such self-restraint as he must be enjoined to practise rigorously in the future will, it is hoped, be successful in preserving a life which, like that of every other member of the reigning family, is dear to the heart of a loyal people.

THE LIFE RISKS OF NON-COMBATANTS.

IF medical officers in the army are "non-combatants," and, therefore, not entitled to the honours of the service, they are evidently exposed to its most deadly risks. During the last engagement in the campaign now in progress, at Kassassin, only one officer was killed, and in this single casualty the medical profession has lost a member. Surgeon-Major Shaw, of the Army Medical Department, is the victim. We have no particulars at the time of writing, but it is manifest that this "non-combatant" was at the front, and in danger. It is a spirit unworthy of the British army and discreditable to gentlemen, that denies the medical officer his due rank, but it is some grim consolation to know that by the appearance of names like the present in the list of killed, the truth must in process of time be made plain to the nation—which, after all, is the true source and fountain of honour, let us disguise the fact as we may. As a matter of experience, the medical officer is, in a double sense, combatant. He fights the worst foe of men in campaigning—disease; and while it may be only occasionally he has to contend with the enemy on the field of battle, he is daily exposed to the same life risks as those who desire to monopolise the credit and privilege of combatant rank; and let us boldly assert that without the excitement of the game of war, which enables these officers to play the part of heroes, the medical officer is their peer in personal courage as he is their equal in the chances of injury and of death.

THE ILLNESS OF THE PRIMATE.

THE condition of the Archbishop of Canterbury excites grave apprehension on the part of his friends. It appears that his Grace has been failing in health for some months past. He had an attack of bronchitis of a gouty character in the autumn of last year, and, as our readers will remember, he sought rest in the neighbourhood of Bordighera in the spring. He returned after Easter somewhat better for the change, and devoted himself as usual to the duties of his office without thought for his own weakness. The gouty condition, however, developed itself in different parts of the body. Thrombi formed in the veins of the leg, and evidence of valvular insufficiency presented itself. On August 7th he was able to visit Osborn, where the Royal Princes on the following day underwent the ceremony of confirmation at his hands, and on the 9th he returned to Addington Park. He had a slight rigor on the 11th, and when visited by his medical attendant was found to have a rise of temperature, increased frequency of respiration, and a pulse of 96. There was slight pain in the left side with dulness on percussion over a large portion of the base of the left lung, and indistinct bronchial breathing, but without crepitation. On the right side the breath sounds were rougher than natural. The pain in the side ceased the next day. On the 16th there was a repetition of the rigor, followed by pyrexia and the development of minute crepitation on the base of the right lung. On the following day the respiration was 40; temperature 101·5°; pulse 96. The cough was scarcely felt and the slight expectoration of glairy mucus tinged with blood, which began on the 11th, ceased on the 19th, and has not since been at all troublesome. He was visited on the 25th by Sir W. Jenner. During the last few days the breathing has continued to vary between 36 and 40, the pulse between 88 and 108. The temperature, sometimes normal in the morning, has risen every day to 100° or 101°. The Archbishop is drowsy and sleeps much, whilst the mucous membrane of the throat is dry and sore. Food of a light, nutritious, but unstimulating character is eaten regularly and in good quantity. There have been occasional tremors in the arm which was paralysed fourteen years ago, but no cerebral disturbance. The diagnosis is thrombosis in the left lung to a considerable extent, with slight pneumonia on the right side, congestion of kidney of a gouty character, with increase in the hypertrophy of the heart, following an attack of pericarditis many years ago, when he was headmaster of Rugby School. The energy which his Grace has evinced during the time he has been Primate, notwithstanding his bodily ailments, cannot but be regarded as remarkable.

MURDER BY POISONING.

ATTENTION is directed to a little village in Hungary, where, until recently, as alleged, a gipsy woman, now seventy years of age, has for a long time carried on a prosperous trade as poisoner. Upwards of a hundred husbands or lovers are said to have been "done to death" under the directions and with the aid of this malevolent hag. By the treachery of her daughter the culprit has at length been brought to justice. The medical aspect of this case has not yet assumed a form which would justify us in making it the subject of professional remark. The most we know of the affair, and that solely from common report, is that the poison employed has, thus far at least, eluded the measures taken for its discovery. "Even now that the bodies of some of her victims have been exhumed, they show no signs of poisoning, though the stomachs are *eaten away*." It is stated that the destroyer of life "excited no suspicion because the drugs she administered acted slowly, though surely, and in their effects simulated the symptoms of disease." This is the hideous and significant feature of the case, giving ground for more than common dread lest the black art of the Eastern poisoner should find its way into Western Europe. It is an unexplained but most happy circumstance that, although European communities are every now and again demoralised by the revelation of some atrocious case of poisoning, that mode of murder has not, and let us hope never will, become naturalised amongst us. The hideous and manifold possibilities of death being brought about by means which cannot be detected by the victim or those around him are enough to scare any community. It is well that we in England have no ground for serious alarm in regard to this crime of secret poisoning. At the same time, it is wise to be ever on the alert. It may be doubted whether, with all the perfection of our vaunted system of Registration, we are as secure as we might be if only more attention were bestowed on *all* cases of chronic or slow disease of anomalous character. It is in connexion with maladies of this nature danger lurks. It cannot be disguised that there are deadly substances capable of inducing changes of tissue that must end in the death of the organism into which they are introduced. Against the administration of these "poisons" there is practically no safeguard. The scrutiny to which mysterious maladies are subjected cannot be too close, and it would tend to the triumph of justice over skilled crime, if attention were less exclusively directed to the recognition of those known mineral and vegetable drugs which are classed as poisons. It is not desirable to say more than this; but so much may and ought to be said in the interests of public prudence and the security of human life.

THE ANTIQUITY OF MAN.

THE present condition of our knowledge in regard to the antiquity of the human race was interestingly summarised by Professor Boyd Dawkins in his address to the Anthropological Section of the British Association. He referred to the rudely chipped flints left by the early hunters in the gravel beds of Hampshire and Wiltshire, when Southampton Water had not yet come into existence, and its site was traversed by the elephant and the reindeer; when the Isle of Wight was still a part of the mainland, and the river-drift hunter could walk across from Portsmouth to Cowes with no obstacles beyond those offered by rivers and morasses. He pointed out that the most striking feature of the Tertiary period is the gradual and orderly succession of higher types of the mammalia, which, indeed, is so well defined that he has used it as a basis for the classification of this period. Professor Dawkins' own observations, combined with those of Prestwich and others, show clearly that the placental mammals become more and more specialised as we approach the frontier of history. The living Orders appear in the Eocene, the living genera in the Miocene, a few living species in the Pliocene, and the remainder in the Pleistocene. He traced the evolution of living forms in the ascending order in point of time, commencing with the historic period, our knowledge of which was based on documents, refuse heaps, and tombs. This period was preceded by the prehistoric, in which domestic animals and cultivated fruits appear. Man was then numerous; he could spin, weave, make pottery, and mine. He could obtain iron and make bronze; and left as traces of his existence camps, habitations, tombs, and refuse heaps. Before this, in the Pleistocene period, man appeared as the palæolithic hunter, and some knowledge of him could be gained from refuse heaps and contents of caves. In the age immediately preceding the Pliocene, the living species of placental mammals appeared; there were apes and simiadæ in Southern Europe. In the Miocene apes and simiadæ existed in Europe and North America. In the Eocene the placental mammals now on earth were represented by allied forms belonging to existing orders and families. Thus it appears that the orders,

families, genera, and species of mammals, when traced forward in time, fall into the shape of a genealogical tree with its trunk hidden in the secondary period, and its branches represented by the living species passing upwards from the Pliocene, a tree of life with living mammalia for its fruit and foliage. The hiatuses or intervals might be filled up with extinct species. The marsupials began their specialisation in the secondary period, and already in the Eocene period had arrived at the stage which is represented by a living genus, the Didelphys or opossum. It will be seen that Prof. Dawkins does not claim for man a higher antiquity than the Pleistocene period, which is equivalent to the Quaternary of the French and the Post-pliocene of the early works of Lyell, and he considers that the views of Capellini and Whitney, referring man to the Pliocene period, rest on unsatisfactory evidence. He enumerates the animals that made their appearance with man, such as the mole and shrew amongst Insectivora; the mouse, beaver, hare, and marmot amongst Rodentia; the cat, wolf, and fox amongst Carnivora, with many other animals of active habits; animals inhabiting the cold climate of mountains, and certain animals like the porcupine, hyena, lion, and panther, now only found in warm climates; and, lastly, certain extinct animals like the mammoth, woolly rhinoceros, and cave bear. He described the buried forest of Cromer and the adjoining seaboard which belonged to the Pleistocene period as composed of Scotch firs and yews, with the spruce, the oak, the birch, and the alder, and showed that whilst the absence of the reindeer was significant, the presence of many species of mammals indicated that at this time Britain was united to the Continent. Though no trace of man has as yet been discovered in these primeval forests, his hour had come and rudely chipped implements of the river-drift hunter began to make their appearance in the late Pleistocene river deposits in Southern and Eastern England, and no difference can be detected in the hâches found in the caves of Cresswell in Derbyshire, and those of Thebes, of Palestine, and of France. This similarity, Professor Dawkins thinks, points not so much to the identity of the races of men that lived in these widely separated regions, as to a primeval condition of savagery from which mankind has emerged in the long ages which separate it from our own time.

SANITARY DEFECTS OF LONDON FLATS.

THE enormous rents paid by the occupiers of fashionable flats would, it might be imagined, suffice to ensure the use of the most recent improvements in sanitary appliances. Such, however, we regret to note, is not the case. In some cases the old and universally condemned container closet is still employed, and evidences of through ventilation in the drain-pipes are wanting. Defects of this description are more serious in flats than in ordinary houses, as the ventilation of the inhabited rooms is not so good. The houses are better built, the doors and windows close with more accuracy, and thus exclude accidental currents. Then to eight families there is but one front and back staircase and street door. Those constant and sweeping draughts of air due to the simultaneous opening of area and back-yard doors do not exist in these flats. Altogether therefore there is less accidental ventilation. The inhabitants of flats must rely for the renewal of air almost exclusively on the opening of the windows, and these, being of the ordinary type, are not easily managed in cold weather, and are consequently opened less frequently than is compatible with the removal of vitiated air. Further, the servants' bedrooms in some apartments have no windows at all, and in others are dependent for their ventilation on a window situated over the kitchen-sink, by the side of the kitchen-closet, and facing the bedroom door. The servants' quarters are dark and unwholesome, so that altogether there is every reason to fear the advent of sewer-gas in these apartments would be more dangerous than usual. Fortunately the families who live in these flats do not often have children with them, so that the injurious effect of this state of affairs is less noticeable. Yet as the tendency is evidently to substitute flats for private houses, a natural consequence of the growth of London and the increased cost of land, we would urge that such sanitary defects should at once be remedied. The expense and trouble would be but slight, and in any case the enormous sum charged for the small accommodation given justifies the tenants in expecting that no pains will be spared to protect their health against the dangers of sewer-gas and difficult ventilation.

CIGARETTE SMOKING.

SCARCELY less injurious, in a subtle and generally unrecognised way, than the habit of taking "nips" of alcohol between meals, is the growing practice of smoking cigarettes incessantly. We have not a word to say against smoking at suitable times and in moderation, nor do our remarks at this moment apply to the use of cigars or pipes. It is against the habit of smoking cigarettes in large quantities, with the belief that these miniature doses of nicotine are innocuous, we desire to enter a protest. The truth is that, perhaps owing to the way the tobacco-leaf is shredded, coupled with the fact that it is brought into more direct relation with the mouth and air-passages than when it is smoked in a pipe or cigar, the effects produced on the nervous system by a free consumption of cigarettes are more marked and characteristic than those recognisable after recourse to other modes of smoking. A pulse-tracing made after the subject has smoked say a dozen cigarettes will, as a rule, be flatter and more indicative of depression than one taken after the smoking of cigars. It is no uncommon practice for young men who smoke cigarettes habitually to consume from eight to twelve in an hour, and to keep this up for four or five hours daily. The total quantity of tobacco used may not seem large, but beyond question the volume of smoke to which the breath organs of the smoker are exposed, and the characteristics of that smoke as regards the proportion of nicotine introduced into the system, combine to place the organism very fully under the influence of the tobacco. A considerable number of cases have been brought under our notice during the last few months, in which youths and young men who have not yet completed the full term of physical development have had their health seriously impaired by the practice of almost incessantly smoking cigarettes. It is well that the facts should be known, as the impression evidently prevails that any number of these little "whiffs" must needs be perfectly innocuous, whereas they often do infinite harm.

MORTALITY STATISTICS OF WATERING-PLACES.

AT this time of the year the competition between watering-places for the favour of the public takes various forms, and it speaks well for the growing intelligence of the visitors of seaside and holiday resorts that the local authorities of these resorts have recently shown so keen a susceptibility in the matter of death-rates. This anxiety to be able to provide a low death-rate is undoubtedly useful in exciting a local interest in sanitary conditions, upon which rates of mortality are more or less dependent. There is, however, a growing tendency to attach too much importance to death-rates for short periods of time in watering-places of small populations. The annual death-rate during three months in a population of a few thousand is of little real value as a test of sanitary condition, although it may be satisfactory to an intending visitor to know that the population among which he intends

temporarily to reside is not suffering from a high death-rate, or from a large proportion of zymotic fatality. One of the evils of this death-rate competition is a general tendency among sanitary authorities of watering-places to *correct* their death-rates, either by deducting the deaths of visitors, or by adding to the estimated population on the ground of the influx of visitors. Such corrections are of very doubtful expediency, as the means for making such corrections are of uncertain trustworthiness. It may be interesting to a watering-place like Scarborough to take, as it is proposed to do, a summer census, but much care should be exercised in applying such numbers to the calculation of a local death-rate. Summer visitors to Scarborough and similar watering-places rarely contribute to the local death-rate, whatever may be the effect of visitors upon the death-rates of such places as Hastings, Vehtnor, and Bournemouth, which are favourite resorts of invalids.

PERMANGANATE OF POTASH IN SNAKE-BITE.

THE statements of De Lacerda on the treatment of snake-bite by permanganate of potash have led Mr. Vincent Richards, formerly a member of the Indian Snake-poison Commission, to undertake a series of researches on the efficacy of the treatment in cobra poisoning. The details of the experiments, which have been lately published, do not corroborate the assertions of the Brazilian physician. Nevertheless, they show that the permanganate, while it does not possess all the power which has been claimed for it, is far from useless, and the results cannot be regarded as a refutation of De Lacerda's statements, since the snake poison investigated was not the same. The cobra virus is certainly destroyed by contact with the permanganate out of the body. In dogs, no appreciable symptoms followed the hypodermic or intravenous injection of a watery solution of from two to seven centigrammes of cobra poison, when previously mixed with from one to three decigrammes of permanganate of potash; although, under ordinary circumstances, such a quantity of the virus is more than sufficient to produce fatal results. When a similar dose of the poison was injected beneath the skin of a dog, and immediately, or at an interval of not more than four minutes, a watery solution of from one to six decigrammes of permanganate of potash was injected into the same part, no appreciable symptoms of cobra poisoning could be observed. If, however, glycerine was used to dissolve the cobra poison instead of water, the permanganate appeared to have no influence on the intensity of the virus. It will be remembered that De Lacerda claimed that permanganate is perfectly effectual, even after the constitutional effects of the poison have commenced. Mr. Richards does not find this to be true of the cobra poison. When symptoms had developed, the injection of the permanganate—hypodermic or intravenous, or both—failed to exercise any influence on the symptoms. Moreover, it possesses no prophylactic powers, since death followed the hypodermic injection of three and a half centigrammes of cobra poison, in watery solution, in the case of a dog, beneath the skin of which eight decigrammes of permanganate had been injected a few hours previously. Thus it appears to be absolutely necessary that the permanganate, to be effectual, should come into actual contact with the cobra poison. The permanganate cannot therefore be regarded as an antidote in the proper sense of the word. It is, nevertheless, an agent of considerable value. Up to the present time, the only really effectual means of treating cobra poison has been the ligature followed by amputation. But in the permanganate we have the means of neutralising the poison while it is in the tissues, although we cannot influence it after it has got into the blood. In the tissues, it is necessary that the permanganate should come into actual and complete contact with the cobra poison. Sloughing is an almost invariable consequence of the injection. Two experiments may be mentioned which clearly illustrate the value of this treatment. The poison was removed from the glands of a cobra, and one-half was injected into a dog weighing fifty pounds, and the other half into another dog weighing only thirty-two pounds. No remedy was applied to the former, and the animal died in six hours and three-quarters. In the second dog, permanganate was injected five minutes after the introduction of the poison, and although the animal was smaller and less strong than the other, it exhibited no symptoms. Again, two dogs were injected, each with two centigrammes of cobra poison. To one a supposed antidote, which had been received from Africa, was administered almost immediately after the injection, but the animal died in less than six hours. In the other case, five minutes after the injection, a catgut ligature was applied, and thirteen minutes later (eighteen minutes after the injection) a solution of permanganate was sent into the part, and the animal showed no symptoms of poisoning. Failure is generally due to a defective application of the ligature, or insufficient injection. Sometimes, however, the intervals are too long, or the dose of poison too large. The best result was obtained in a case in which a quantity of poison was injected into a dog sufficient to kill it in five or six hours, and the ligature was applied five minutes after, followed by the injection of the permanganate of potash twenty minutes later—twenty-five minutes after the injection of the poison. The animal did not exhibit a single symptom of snake-bite. It sometimes happens, from the ligature or the injection being insufficient, that some of the poison will be absorbed, and serious symptoms occur, from which the animal may or may not recover, but which are less rapid than without the injection. A series of experiments made to determine the best strength and quantity of the permanganate solution showed that while a 2 per cent. solution may answer, it is safer to employ a 5 per cent. solution. This must be thoroughly injected, two or three drachms being sent into the part, which should be well pressed with the fingers. This is the estimate for the usual quantity injected by the cobra in its bite, a quantity which usually causes the death of a man in five or six hours. A tight ligature should of course be applied immediately after the bite, and should not be removed until some minutes after the injection. Mr. Richards throws out the suggestion that the injection of the permanganate deserves a trial in bites of rabid animals, the virus of which would probably be destroyed by it. The suggestion certainly deserves attention at the hands of those who are engaged in experiments upon the subject.

THE DISINFECTING OF DUSTBINS.

DURING hot weather it is more especially necessary to watch that the removal of dust does not occasion a dangerous nuisance. Theoretically the dustbin of each private house should not contain any organic matter liable to rapid decomposition. Vegetable refuse, even fish-bones, should be burnt behind the kitchen fire, and the dustbin, holding only dust, would not, particularly if emptied at short and regular intervals, give rise to any inconvenience. Practically, however, vegetable and animal matter, together with a considerable amount of moisture, are not only often thrown in the ash receptacles, but kept there many days and even weeks beyond the prescribed limit of time. When finally the emptying takes place there is an upheaval of fermenting and rotten matter, that throws off gases of a highly dangerous character. In a street near Covent-garden, we recently witnessed an operation of this nature. The stench in its foulness was beyond description, and travelled a distance of more than fifty yards up the street and reached the top floors of the houses. On

inquiry it was found that no effort whatever was made to abate this nuisance; and therefore we would urge that, in future, scavengers should always carry with them a quantity of disinfectants. If dustbins are badly kept the disinfectant should during the emptying be mingled with the contents in sufficient quantities to prevent a nuisance; and in such cases it would be only fair to charge the inhabitants of the house with the extra cost their carelessness had necessitated. It should be remembered also that the unpleasantness and risk are not limited to the house whence the filth is removed. The scavengers have to travel sometimes several miles with their heavy carts jolting their foul contents, and emitting poisonous exhalations through thickly populated streets. Then when finally the dustyard is reached, the danger is not over. Here a number of poor women sift the dust carefully, to extract therefrom anything that may have some value, such as small coal, paper, old shoes, and even a stray spoon. Again we urge that all these operations should not be allowed unless their danger is mitigated by the extensive use of disinfectants; while, on the other hand, stronger pressure should be brought to bear on householders who allow their dustbins to become a nucleus of disease.

PORK-MEASLE IN MAN.

M. TROISIER exhibited lately to the members of the Paris Hospital Medical Society a man thirty-six years old, a Parisian, who for a year past had noticed small swellings arise on the cheek, arms, legs, and abdominal wall. These swellings proved to be due to cysticerci, and, curiously enough, the patient had passed a tænia solium whilst bearing these larvæ in his body. M. Troisier suggested two hypothetical explanations of the coincidence: either that the man had swallowed the ova of his own tapeworm, or that tapeworm and cysticerci were derived from the same external source. He asked what treatment should be followed to rid the patient of his disease. No one could dream of removing them one by one, but some such simple method as puncture with the hypodermic syringe might suffice to kill them. Many similar cases are referred to by Lancereaux in his work on Pathological Anatomy, although they are not so frequent as the occurrence of solitary cysticerci in organs. Lancereaux gives a figure showing numerous subcutaneous cysts in a woman, and among other facts quotes the statement of Rudolphin to the effect that in his time at Berlin cysticerci were found in one out of every fifty post-mortem examinations, occurring most often in the gluteal, psoas, iliacus, and vasti muscles, and more rarely in the brain. Bonhomme, in one case, calculated that there were as many as two thousand lodged in the subcutaneous, subfacial, and intermuscular connective tissue.

UNCERTIFIED DEATHS AT LEEDS.

THE *Leeds Mercury* of Aug. 24th reports some very important observations of the Borough Coroner on the number of uncertified deaths in Leeds which have to be submitted to investigation by a coroner. The coroner regards this as a very serious matter, for which he blames the system of cheap dispensaries. Last week five cases came from one surgery. It was not right, the coroner said, for a medical man to open a number of branches and fill them with unqualified assistants who could not certify. We regret that the coroner should have the trouble of investigating the cases that end fatally under such a system. But he must be comforted by reflecting that he is exposing a great evil, which has been lately more thoroughly exposed in London. The poor are partly themselves to blame. They are thoughtless about the remuneration of medical men, and think to get medical attendance for grave illnesses for sums they would be ashamed to give their Publicans for a week's beer.

SCOTTISH UNIVERSITY COMMISSION.

DURING the earlier part of the past session of Parliament high hopes were indulged by those interested in the Scottish Universities that a strong Executive Commission would be named having power, not only to supplement the inquiries of the late Commission, but to order such reforms as are now necessary. The Universities of Edinburgh, St. Andrews, and Aberdeen have shown a strong desire for immediate action; indeed, without this the very existence of St. Andrews, the oldest of the northern Universities, as an efficient teaching body, seems questionable. Glasgow opposes the action of her sister Universities, and would prefer that such changes as are necessary should be instituted by her own authorities. As regards the curricula, perhaps the most important change sought is that by which several routes would be allowed towards graduation in Arts. This would materially affect the medical curriculum also, as the M.A. who chose to graduate in natural science would not require a second examination in those subjects prior to graduation in medicine, and this change will probably raise the whole question as to the position which chemistry, zoology, and botany should occupy in medical education. A large body of opinion in Scotland supports the proposal to place these subjects in the preliminary examination, while perhaps a more influential section would wish to see other subjects added to that examination, or the present subjects made so severe as to give a better guarantee of a good general education, and that the first professional examination should be in pure science, including physics, afterwards leaving the four years for purely medical study. It is just possible that the year's delay may be most useful, so far as medical education is concerned, as the present period of change brings daily into greater prominence the practical and demonstrative element in teaching. The necessity of arranging for the appointment and remuneration of a sufficient number of assistants to the professors will be more fully recognised as the new system becomes more permanent, and other questions which we hear mooted, such as the status of extra-mural lecturers and their more full recognition by the University authorities, will have time for consideration by the interested parties, and perhaps for informal debate by opposing interests. The Government are pledged to take early action, and next session is almost certain to see the appointment of a strong Commission.

VINDICATION OF MEDICAL MEN IN SOUTH AFRICA.

THE *Port Elizabeth Telegraph* does a service to the public, more even than to the profession, in holding up to contempt the finding of a court in which Dr. Sharpe, of Jagersfontein, was the plaintiff against one Salmon, a druggist, who declared that three grains and a half of chlorate of potash was a poisonous dose and the cause of the death of a child. The court found that Salmon had not spoken in malice and, secondly, that the doctor, being in arrear with his licence fee for that year, had no *locus standi* in courts of justice. This is a most unjust and inadequate verdict on a charge the most absurd that was ever made by a chemist. The sooner some pharmaceutical society is established to test the knowledge of chemists the better.

THE VACCINATION INQUIRY AT NORWICH.

THE investigation by Mr. Henley and Dr. Airy into the deaths at Norwich, alleged to have resulted from vaccination, is not yet concluded. We must therefore defer remarks on the case, save the expression of the hope that the protracted nature of the inquiry may be taken as a guarantee that it will be full and complete.

MATTERS AT THE CAPE.

THE *Port Elizabeth Telegraph* seems to take a sensible view of the advantages of medical coronerships, and supports various towns in the eastern province which are agitating for properly constituted Coroners' Courts. We cannot imagine a more important object than this for such towns. The question of small-pox, also, is a burning one in the colony. If wisdom is displayed by the authorities and the population, it should be possible to restrict its ravages. The *Times* reports the spread of the disease in Cape Town. The immediate revaccination of every person above seven years of age in an infected house, the vaccination of all unvaccinated persons, and the revaccination of all unrevaccinated adults, would make short work of the epidemic. Practitioners will doubtless make every effort to practise vaccination from arm to arm in well-selected cases, so that by its thoroughness it may be appreciated by the community, which never appreciates vaccination excepting when face to face with small-pox. The *Telegraph* touches on another question not without interest in a medical respect. It alleges that farmers are neglecting the cultivation of sheep under the temptation of the high price of ostrich feathers. More attention, too, is paid to the wool than to the weight of the carcase of the sheep. Under these circumstances, the price of the daily joint of the working man is assuming such proportions as will render butchers' meat as great a luxury to him in South African colonies as to the Dorsetshire labourer. The sooner this is realised the better.

STRANGULATED HERNIA: WOUND OF INTESTINE.

A WOMAN, aged thirty-five, who had for many years had a right inguinal hernia only imperfectly kept up with trusses, and who three months previously had had an abscess over the hernial sac, was admitted into the Necker Hospital under M. Trélat with all the symptoms of strangulation of the hernia. As taxis had already been tried, M. Trélat had her at once anæsthetised, and, after a further attempt at taxis, operated. On opening the sac he found the intestine bound to the sac by old adhesions. He proceeded to dissect through these adhesions, and while so doing the gut ruptured. The dissection was proceeded with, and then the wound in the intestine was closed with seven interrupted sutures, and, after careful cleansing of the parts, the gut was returned, the sac excised, and the wound closed by deep and superficial sutures. Next day the patient passed a motion. The wound healed by first intention, the drainage-tube was removed on the fourth day, and the patient recovered without any complication. This case is very encouraging, for the congested state of the intestinal walls was not favourable to rapid healing of a wound in it or to tolerance of sutures.

THE SANITARY STATE OF MARLOW.

DURING the recent proceedings of the Wycombe rural sanitary authority the condition of Marlow came under consideration. A number of conditions, which may be summed up in the words of one of the speakers as "dirt, filth, and overcrowding," were specified, and one member of the authority pointed out that visitors to this favourite river-side town had grounds for reporting in a public paper that the sewage of the place was running down the streets. The inspector of nuisances warned the authority that if they once touched the question of drainage it would be a very serious thing, and when the chairman inquired where the overflow from a large cesspool went to, he first supplied an answer to his own question by explaining that it went into some one's well, and then elicited a further explanation from the inspector of nuisances to the effect that the town lies on a gravelly soil which is practically honeycombed with wells and cesspools. Under these circumstances it would be exceedingly unwise for the sanitary authority to postpone for any length of time the adoption of necessary remedial measures.

SEWAGE RESERVOIRS ON THE THAMES.

THE Metropolitan Board of Works have shown wisdom as well as good taste in their decision to defer the extension of their sewage reservoirs at Barking and Crossness until the Royal Commission now sitting has finished its labours. The Commission has adjourned until October 24th, and in the meantime an immense mass of evidence, practical and scientific, is accumulating. London owes so much to the Metropolitan Board that it is regrettable to find that body on the present occasion in opposition to what we take to be the general feeling of Londoners.

HOSPITAL SATURDAY.

THE present Saturday (September 2nd) is the day for taking up the Hospital Saturday Fund. We heartily wish it success. It is essentially an appeal to the working classes of the metropolis on behalf of institutions in which, on the occurrence of grave accident or disease, they are treated by the best physicians and surgeons in London. Hitherto the result has not been at all adequate to the means of those to whom the appeal is made.

SPONTANEOUS EXPULSION OF A VESICAL CALCULUS.

M. MOUCHET recently showed to the Société de Chirurgie of Paris a phosphatic calculus measuring 7 cm. by 6 cm. by 5 cm. This calculus had been lodged for a long time at the neck of the bladder of a woman, seventy-two years of age, and had been mistaken for a malignant tumour. During a severe attack of pain it was expelled into the vagina. The patient recovered with only a small urethro-vaginal fistula.

DR. BLAXALL, R.N., Medical Inspector to the Local Government Board, is actively pursuing his inquiry as to the sanitary circumstances and surroundings of emigrants passing through this country to their several ports of departure for America and elsewhere. The question of infectious disease amongst them, either when the symptoms are already manifested or during the period of latency, is engaging special attention with a view to the adoption of remedial measures to stay the spread of infection by isolation and otherwise. Captain Wilson, representing the Board of Trade, is associated with Dr. Blaxall in the inquiry, and the two commissioners have recently been engaged in eliciting the facts relating to the port of Liverpool.

MEDICAL practitioners in England complain, and justly, of the inadequate remuneration they often receive for the inconvenience to which they are put and the time lost in giving evidence at inquests. But their brethren at the antipodes are in worse case, since it appears they are compelled in some instances to travel 200 miles on horseback to bear sworn testimony to the cause of death, receiving as fees for the journey and full professional expenses the sum of £7 13*s.*!

ASSISTANT-SURGEON C. CRANE, U.S.A., so long and ably connected with the office of the Surgeon-General, at Washington, D.C., and occupying for many years the position of Assistant-Surgeon-General, has been appointed by the President, Surgeon-General to the United States Army, in succession to Dr. J. K. Barnes.

WE have received from Mr. Stanford, of Charing-cross, two maps, one showing the Nile Delta, with plans of Port Said, Ismailia, Suez, and Cairo, also the Canal and Cape Route to India, Australia, &c.; the other presenting on a large scale the seat of military operations in Lower Egypt. Both maps are characterised by the excellence for which the productions of the above firm are distinguished.

CHOLERA is reported to be increasing at Manilla, Luzon, one of the Philippine Isles. The Spanish Government have adopted stringent precautions against importation of the disease. The epidemic is raging also in Japan. Despatches received at Madrid state that of 775 cases at Yokohama, 572 proved fatal.

THE typhoid epidemic at Bangor exhibits at present but faint indications of abatement. Attention has been directed to the water-supply, and the water of the river has been temporarily diverted from the filter bed of the reservoir. All the schools continue closed.

DR. A. W. SMYTH has received from President Arthur the appointment of Superintendent of the New Orleans Mint. This selection would seem to imply that Dr. Smyth has obtained as a politician a distinction second only to that he is acknowledged to have gained as a surgeon.

WE have information as to the prevalence of diphtheria in and about Midhurst in Sussex. According to the last quarterly return of the Registrar-General, two fatal cases were recorded in the Midhurst subdistrict during the quarter ending June 30th.

THE French Minister of Agriculture has placed at the disposal of M. Pasteur a further sum of fifty thousand francs, for the purpose of continuing his researches in connexion with the contagious diseases of animals.

MR. HENRY BUTLER, F.R.C.S. Eng., and E. L. CROWTHER, M.D. Aber., L.R.C.P. Ed., have been re-elected Members of Parliament, Hobart, Tasmania.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Kensington.—According to Dr. Dudfield's annual report for 1881 the death-rate for the parish was only 16·6 per 1000 living. This is the lowest rate recorded, but the parish was less favourably distinguished by having also an exceptionally low birth-rate—namely, 26·9 per 1000, or 7·8 per 1000 below that of the metropolis generally, and this notwithstanding the fact that there was a high marriage-rate, which reached 21·6 per 1000, as opposed to 18 per 1000 in the metropolis generally. The deaths under one year of age amounted to 14·6 per cent. on the registered births, as compared with 15·6 per cent. in the 19 large towns and cities. The year 1881 was memorable in Kensington, as in the metropolis generally, for the epidemic of small-pox which, commencing towards the end of 1880, continued with varying severity throughout the year. In all, 369 cases were heard of in Kensington. Of this number 300 were treated in hospital with a mortality of 14 per cent., and 69 remained at home with a mortality of 19 per cent. Concealed cases may, however, vitiate the value of the rate as regards the home cases. Most of the patients who went to hospital were removed to the Fulham Hospital, which received 1914 cases, Kensington contributing 275 patients. The history of the legal proceedings, which ended in the issue by the Court of Common Pleas of an order limiting the use of the hospital to patients residing within a radius of one mile of the building, is entered into; and the circumstances which led to Dr. Thorne Thorne's and Mr. Power's report on infectious hospitals, and on the influence of the Fulham Hospital, are also referred to; the delay in the issue of those reports being explained as due to the circumstance that they are in the hands of the Royal Commission on Infectious Hospitals. Pending the distribution of the Commissioner's report, Dr. Dudfield defers the discussion of several points relating to the late epidemic. He, however, adverts to the fact that during its progress the rest of the kingdom remained all but free from small-pox, whereas during former epidemics many of the large towns suffered even more severely than the metropolis; and he attributes the marked decline in small-pox mortality in the nineteen large towns coming next to London to the fact that since 1875 they have been in charge of medical officers of health, and that there has in each of them been a unity of sanitary administration; whereas, on the other hand, London, with its divided sanitary control, retains an unenviable pre-eminence as regards this mortality. Dr. Dudfield has all along been an ardent advocate for the compulsory notification of infectious diseases, and he would welcome a general statute dealing with this subject, whether the duty of notifying devolved on the medical practitioner or on the householder. He, however, personally favours the former alternative, and feels convinced that, whatever is done as a first step, the intimation must in the long run be made by members of the medical profession. As to this subject, the terms of the special report of the Committee of the House of Commons appointed to deal with private Bills affecting police and sanitary regulations are extensively quoted and commented on. Many other subjects, including a general review of the various sanitary circumstances of London, such as its water-supply, &c., which affect Kensington, as also an account of the action taken to prevent the spread of disease and to secure the abatement of nuisances, are dealt with in Dr. Dudfield's report, which forms a comprehensive summary of all the conditions affecting health in the district which is under his control as medical officer of health.

Wortley.—Dr. Samuel Drew, in retiring from the post of medical officer of health to the No. 1 District of the Wortley Union, points out to the rural sanitary authority that whereas in the two years following on his appointment in 1873 the death-rate amounted to 24 per 1000 persons living, it had during the past two years only reached 17 per 1000. This diminution in the death-rate, which led to an annual saving of 119 lives in the district, was, in his opinion, in great part due to the sanitary improvements which had been adopted, and to the effective administration which had been carried out.

Glasgow.—Mr. Kenneth Macleod, the Sanitary Inspector for the City of Glasgow, presents a separate report, which gives evidence of the excellent sanitary work which is carried on under Dr. Russell's supervision. From this report it appears that when any drain nuisance is suspected the smoke test is applied to the drains of the house in question, and a report of all the leakages and defects which are detected is presented to the house-owner, together with details as to the remedial measures which are necessary. All this is done without any charge, and it is not surprising to find that the public are rapidly learning to appreciate the action of the sanitary authority in this respect. With a view to the more effectual arrest of infectious diseases a special washhouse for infected linen and other articles was established in the city in 1864. In 1871 more commodious premises were procured, but the rapidly increasing demand on its limited resources has led to a determination to erect new buildings on a much larger scale. In 1865 the total number of articles disinfected and washed amounted to 29,489, whereas in 1881 the number had reached 206,953. And it is shown that this large increase is by no means due to an increase in the number of fever patients, but rather to the fact that the work of cleansing and disinfecting is so well carried out that the public forward to the establishment many articles with which they formerly did not trust the authority. Thus in the first year of its history the washhouse received at the rate of four articles from each fever patient for whose purposes the establishment was used; whereas in 1880 the rate had increased to thirty articles per

patient. The health committee, being desirous, above all things, to protect the citizens from the risk of infection, carry out all this work free of cost to the sick whose articles are dealt with.

Dublin.—During the four weeks ending August 1st, the deaths within the metropolitan registration area were in the ratio of 19·17 per 1000. The death-rate during July was 1·22 lower than it was in the preceding month; while the mortality caused by diarrhœa and dysentery was somewhat, but not excessively, high. There were very few cases of any of the other zymotic diseases. If last month is contrasted with the corresponding period during the last ten years, it will be found that the zymotic death-rate was little more than one-third of the average rate. A very large amount of fish in a state of semi-decomposition was detected during the month and destroyed.

ANNUAL REPORT OF THE LOCAL GOVERNMENT BOARD FOR IRELAND.

We learn from this report, which is of a highly interesting character, that the average daily number of persons receiving relief in workhouses during the year was 52,772, and out-door relief 60,196, which, compared with similar returns for the previous year (53,796 and 60,883) show a decrease of 1024 and 687 respectively. During the year 56,027 persons were under treatment in the workhouses for various affections, including 7222 cases of fever, or other contagious disease, with a mortality of 11,860. A decrease of 6604 took place in the total number admitted sick to workhouses during the year, also in the number of fever cases, and in the mortality of those admitted. Last year 632,493 new cases were attended by dispensary medical officers, which included 187,562 visiting tickets, and 113,557 people were vaccinated or revaccinated during the same period, being a decrease of 34,271 as contrasted with the previous year. Sixty-four deaths took place in workhouses from small-pox; and there was a considerable decline in the number of fever cases attended by dispensary medical officers, the numbers being 9713, against 11,211 in 1880. The total expenditure of poor-rates for all purposes—viz., relief, medical relief, burial grounds, registration of births, deaths, and marriages, sanitary measures, expenses under Superannuation Act, &c., was £1,251,617, being an increase in the total expenditure of £64,369. The current sanitary expenditure for the year was £48,918, against £51,927 in the year preceding.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns, 5600 births and 3680 deaths were registered during the week ending the 26th ult. The annual death-rate in these towns, which had slowly increased in the five preceding weeks from 19·0 to 23·4, declined again last week to 22·7. The lowest rates in these towns were 13·7 in Derby, 16·4 in Bristol, 18·2 in Halifax, and 18·8 in London. The rates in the other towns ranged upwards to 29·5 in Birmingham, 31·3 in Wolverhampton, 32·0 in Salford, and 34·5 in Hull. The deaths referred to the principal zymotic diseases in the twenty-eight towns further rose last week to 1058, and showed a further increase of 68 upon recent weekly numbers; 751 resulted from diarrhœa, 95 from whooping-cough, 75 from scarlet fever, 53 from "fever," 50 from measles, 31 from diphtheria, and only 3 from small-pox. The lowest death-rates from these diseases last week occurred in Derby and Bristol, and the highest in Nottingham and Hull. Diarrhœa showed a further general increase of mortality, and caused the highest death-rates in Wolverhampton, Nottingham, and Hull; whooping-cough caused the highest death-rates in Oldham and Plymouth; scarlet fever in Salford, Oldham, and Plymouth; measles in Huddersfield; and "fever" in Blackburn and Preston. The 31 deaths from diphtheria in the twenty-eight towns included 18 in London, 3 in Birmingham, and two both in Manchester and Leeds. Of the three deaths from small-pox, two occurred in Newcastle-upon-Tyne and one in London. The number of small-pox patients in the metropolitan asylum hospitals, which had declined in the seventeen preceding weeks from 350 to 111, were 114 on Saturday last; and 32 new cases of small-pox were admitted to these hospitals during last week, against 19 and 18 in the two preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had been 223 and 197 in the two preceding weeks, were 199 last week, and exceeded the weekly average by 41. The causes of 83, or 2·3 per cent., of the deaths in the twenty-eight towns last week were not certified either by a medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Birmingham, Nottingham, Derby, and Blackburn; whereas the proportions of uncertified deaths were largest in Wolverhampton, Bolton, and Cardiff.

HEALTH OF SCOTCH TOWNS.

The annual death-rate in the eight Scotch towns, which had been 20·1 and 20·7 in the two preceding weeks, was 20·0 in the week ending the 26th ult.; it was 2·7 below the mean rate last week in the twenty-eight large English towns. The deaths referred to the principal zymotic diseases in these Scotch towns were 136 last week, and showed a slight further increase upon recent weekly numbers; they included 81 from diarrhœa, 12 from scarlet fever, 12 from diphtheria, 12 from "fever," 11 from whooping-cough, 8 from measles, and not one from small-pox. The death-rate from these principal zymotic diseases averaged 5·8 per 1000, and was 0·7 below the mean rate from the same diseases in the twenty-eight large English towns. The 81 deaths attributed to diarrhœa showed a further considerable increase upon recent weekly numbers, and were more than three times as numerous as in the corresponding week of last year, when only 25 were recorded; the fatality of this disease was considerably higher last week in the English than in the Scotch towns. Diarrhœa was most fatal last week in Greenock, Edinburgh, and Dundee. The 12 deaths from scarlet fever showed a slight decline from the numbers returned in recent weeks, and included 5 in Glasgow and 3 in Paisley. The fatal cases of diphtheria, which had been 10, 13, and 17 in the three preceding weeks, declined last week to 12, and included 9 in Glasgow and 2 in Greenock. The deaths referred to "fever," which in the two previous weeks had been 8 and 15, also declined to 12, of which 5 were returned in Glasgow, and 2 both in Paisley and Perth. The 11 deaths from whooping-cough were 4 less than those returned in the preceding week, and included 5 in Glasgow and 3 in Aberdeen. The 8 fatal cases of measles corresponded with the number in the previous week; 4 were returned in Dundee, 2 in Glasgow, and 2 in Leith. The deaths referred to acute diseases of the lungs in the eight towns, which had been 71 and 73 in the two preceding weeks, declined to 60 last week, and exceeded by 8 the number attributed to the same diseases in the corresponding week of last year.

HEALTH OF DUBLIN.

The rate of mortality in Dublin, which had been equal to 23·5 and 20·1 per 1000 in the two preceding weeks, rose again to 23·6 in the week ending the 26th ult. During the first eight weeks of the current quarter the death-rate in the city averaged 21·3 per 1000, against 18·6 in London and 17·9 in Edinburgh. The 159 deaths in Dublin last week showed an increase of 25 upon the low number in the previous week; they included 16 which were referred to diarrhœa, 6 to "fever," 4 to whooping-cough, 1 to scarlet fever, and not one either to small-pox, measles, or diphtheria. Thus 27 deaths resulted from these principal zymotic diseases, against 15 in each of the two previous weeks; these were equal to an annual rate of 4·4 per 1000, while the rate from the same diseases was 4·0 in London and 4·5 in Edinburgh. The fatal cases of diarrhœa, which had slowly increased from 5 to 10 in the four preceding weeks, further rose to 16 last week, and exceeded the number returned in any previous week of the year. The six deaths referred to "fever" (enteric, typhus, or simple), showed an increase of four upon the number in the previous week. The deaths from whooping-cough, which had been but three since the end of March, rose to four last week. The deaths both of infants and of elderly persons showed a considerable increase upon the numbers in the previous week. The causes of 22, or nearly 14 per cent., of the deaths registered during the week were uncertified.

THE DECLINE OF THE BIRTH-RATE IN FRANCE.

A recent number of the Journal of the French Statistical Society contains an article calling attention to the serious aspect of the vital statistics of France. The official statistics

for the year 1880 have not long been issued, and they afford good ground for the grave consideration of patriotic Frenchmen. The marriage-rate, which was equal to 8·85 per 1000 of the population in 1873, has since steadily declined, and was but 7·47 in 1880. This decrease is partly attributed to the effect of the Franco-German war, which caused an increase of the marriage-rate in 1873–5, in reaction from the reduction of the rate while the war lasted; moreover, the loss of young men during the war is still said to affect the marriage-rate. Partly, probably, in sympathy with the steady decline in the marriage-rate, the birth-rate has shown a coincident decrease. The birth-rate in France, which in 1873 did not exceed 26·1 per 1000, has since further declined, and in 1880 it was but 24·7. If we exclude 1871, when the direct effect of the war caused the rate to fall exceptionally low, the proportion of births to population has not been so low as it was in 1880. The Journal of the Statistical Society pertinently remarks that in no other European State that publishes such statistics is the birth-rate so low as in France, and that the rate in the German Empire in 1880 averaged no less than 39·1, or 60 per cent. higher than the French rate. The French death-rate shows no decline to balance the decrease of births in the population. The rate in 1880 was 23·0 per 1000, and slightly higher than in any year since 1875; the mean rate in the two periods of four years ending 1876 and 1880 was almost identical. It is pointed out, however, that the French death-rate compares favourably with that prevailing in any other European nation, except in England and in the northern Scandinavian countries. This fact is in error partly attributed by the Statistical Society's Journal to the low birth-rate in France. In English populations, however, a low birth-rate is evidence of an age distribution of the population which produces an abnormally high death-rate. The small proportion of young adults in the French population, and the relatively larger proportion of elderly persons, partly account for the excess in the death-rate. As the inevitable result of the decrease in the birth-rate, and the steadily maintained death-rate, the natural increase of the population by excess of births over deaths, which was 172,946 in 1874, fell to 61,840, or considerably less than half, in 1880. The natural increase of population, according to the figures in 1860, would have caused the population to double itself in 145 years. In accordance with the figures in 1880, however, it would take no fewer than 433 years for the French population to double itself. This want of elasticity in the French population is more remarkable when compared with the rapid increase in England and Germany.

TYPHOID IN PARIS.

At the meeting on August 11th of the Paris Hospitals Medical Society, M. Ducastel read the report upon prevalent diseases for the second quarter of the year. It showed a much higher mortality than in the corresponding period of previous years. Typhoid fever and diphtheria have prevailed to an extreme degree, and pulmonary diseases have been most numerous and severe. In the hospitals there were 378 cases of diphtheria, as against 267 (in 1881); in the town 728 instead of 523, the mortality reaching the enormous figure of 70 per cent. In the month of June typhoid fever showed a marked increase—viz., 452 cases admitted into the hospitals; in the town 192 deaths, instead of 97 in the previous year. M. Dujardin-Beaumetz declared that he had never seen so much typhoid fever as at present. In the St. Antoine Hospital there were thirty cases in one ward. MM. Moutard Martin and Troisier stated that the pressure was so great at the Hôtel Dieu that an annex had just been opened to receive patients. Later accounts from Paris fully bear out these statements, especially as regards typhoid fever, which is remarkably prevalent.

THE SERVICES.

Surgeon-Major Alfred Clarke has been appointed to the medical charge of the Royal Military College, Sandhurst, vice Deputy Surgeon-General Thomas Fraser, M.D., retired. Surgeon-Major William Johnston succeeds Dr. Clarke as Staff Officer of the Army Hospital Corps and Assistant in the Sanitary branch of the War Office, Whitehall-yard.

Surgeon-Major W. Wilson, M.D., has embarked on board the P. & O. steamer *Siam*, in medical charge of the troops proceeding to Egypt. The *Siam* left the Albert Dock on the 30th ult.

Surgeon-Major Wm. Sly has left England for Gibraltar.

Surgeon-Major Barker has been ordered from Dover to Aldershot to organise the 3rd Bearer Company for service, if required, in Egypt

Surgeon-Major Melladew, Royal Horse Guards, has been detailed to accompany the detachment of Household Cavalry leaving the Albert Docks on Saturday in the *Persian Monarch* for Ismailia.

Surgeon-Major T. Wood proceeds to Egypt in medical charge of the troops in H.M.S. *Tyne*.

Surgeon-Major W. K. Cumming, Army Medical Department, has been granted leave of absence from India, pending retirement from the service.

Surgeon-Major John Berry White, Indian Medical Department, has retired from the service.

The Queen has approved the retirement of Surgeon-Major Thomas Miller, M.D., and Surgeon-Major Malcolm Munro Mackenzie, of the Bombay Army.

ARMY MEDICAL DEPARTMENT.—The undermentioned Surgeons on probation to be Surgeons:—Sinclair Westcott, Hayward Reader Whitehead, Bruce Morland Skinner, Charles Richard Bartlett, John Dennis Thorpe Reckitt, Thomas Alfred Perry Marsh, Roger Kirkpatrick, M.B., Alexander Charles Archibald Alexander, Harry Strickland McGill, Augustus Alexander Pechell, M.B., Charles Robert Tyrrell, James Hickman, Wilfred Burrell Thomson, Herbert Edward Deane.

BREVET.—Surgeon-Major Edric Selous, of the Bengal Army, to be Brigade-Surgeon.

RIFLE VOLUNTEERS. — 1st Cambridgeshire: Surgeon Alfred Nicholas Jones is granted the honorary rank of Surgeon-Major.—1st Durham: Honorary Assistant-Surgeon Samuel Winn Broadbent to be Surgeon.—1st Kent: Surgeon Blackall Marsack resigns his commission; also is permitted to retain his rank, and to continue to wear the uniform of the corps on his retirement.—3rd Monmouthshire: Acting Surgeon Charles Bent Ball, M.D., resigns his appointment.

ADMIRALTY.—The following appointments have been made:—Surgeon William Edw. Bennett, to the *Audacious*; Surgeon Edmund D. Maddick, additional, to the *Duke of Wellington*; Staff Surgeon Richard S. P. Griffiths, to Bermuda Dockyard, vice Power; Staff Surgeon William T. Power, to the *Orontes*, vice Griffiths; and Surgeon John Price, to the *Indus*, vice Twigg; Fleet Surgeon John Breaky, to the *Duncan* (additional); Fleet Surgeon Thomas Smith Burnett, to the *Audacious*; Fleet Surgeon Stephen Sweetnam, to the *Valiant*, vice Thomas S. Burnett.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

FROM the annual statement of the receipts and expenditure of this College during the official year from midsummer-day, 1881, to midsummer-day, 1882, it appears that the income of the College from all sources amounted to £18,578 2*s.* 11*d.*, of which sum £15,633 3*s.* was received by examination fees alone—viz.: preliminary examination, £996; primary and pass examination membership, £13,191 3*s.*; primary and pass examination fellowship £1172; dental examination, £294. Rent of chambers and house property in Lincoln's-inn-fields produced £1523 14*s.* 6*d.*; dividends on stock, £1007 4*s.*; incidental receipts, £129 15*s.* 2*d.*; and receipts from trust funds, £174 6*s.* 3*d.* Total, £18,578 2*s.* 11*d.* The expenditure over the same period, including an investment of £1073 15*s.*, was £17,272 2*s.* 5*d.*, and may be divided as follows:—"Fees to members of Council, £213 3*s.*; College of Preceptors preliminary examination, £315 9*s.* 6*d.*; Board of Examiners in anatomy and physiology, Court of Examiners, and working expenses at membership and fellowship examinations, £6432 6*s.*; examiners in medicine, £292 4*s.*; examiners in midwifery, £96 16*s.*; examiners in dental surgery, £95 17*s.*; diploma stamps, £390. College department: salaries and wages, stationery, printing, advertisements, postage-stamps, fuel and light, &c., £2916 17*s.* 3*d.* Museum department: salaries, wages, and pensions, lectures, specimens, spirit, glasses and bottle, &c., £2135 6*s.* Library department: salary and wages, purchases, and

binding books, &c., £771 9s. Taxes, rates, and insurance of College buildings, £1135 10s. 8d.; alterations, repairs, and painting, £559 16s. 7d. Extraordinary expenditure: conversazione to the members of the International Medical Congress, £278 10s. 8d. Trust funds, £118 5s. 5d.; investment, £1073 15s.; miscellaneous items, £445 16s. 4d. Total, £17,272 2s. 5d.

NOTES ON SOME KNOWN MINERAL SPRINGS IN MADAGASCAR.

MR. G. W. PARKER, L.R.C.P. Lond., M.R.C.S., Physician and Surgeon to the Queen of Madagascar, has favoured us with the following particulars of the mineral springs of the island.

Since extinct volcanoes are very numerous in some parts of the island of Madagascar we should naturally expect to find springs, either hot or cold, which might be useful in the cure of diseases. And such is the case, although the capabilities of this large island, in this respect, are almost unexplored; for there are several places where hot springs issue from the ground—some comparatively near to the east coast, others near to the edge of the central highlands, while there is one district near the extinct volcanic mass called "Ankàratra" where carbonic acid gas issues freely out of the soil. These mineral waters may be classed under the following heads, adopting Dr. Tanner's classification:—

CLASS 1. *Ferruginous waters.*—I do not know of any springs belonging to this class of which the water has been analysed by Europeans, or which are drunk by the natives, but I have noticed in the iron districts many springs which deposited what appeared to be a ferruginous sediment.

CLASS 2. *Sulphurous waters.*—I believe some springs of this class exist in the iron district of Vònizòngo (near the London Missionary Society's station), about one day's journey from Antanànarivo.[1] The natives declare that there are two or three springs (thermal?) here, the waters of which have a strong odour of sulphuretted hydrogen. A few years ago there was a great rage for these Vònizòngo springs, the natives making a "rush" thither in large numbers in order both to drink their waters and to bathe in them.

CLASS 3. *Acidulous waters.*—In the district of "Antsirabè" (near the Norwegian Mission station) are a number of springs of this class, between 400 and 500, it is said. The earliest notice of these springs is in Ellis's "History of Madagascar," where the writer calls attention to the simple carbonic acid gas springs, some being dry holes in the soil, marked by the carcases of grasshoppers and other small creatures which, accidentally falling in, have been suffocated; others being springs of sparkling water, apparently "boiling," as the Malagasy say, yet sensibly cold to the hand, and by no means unpalatable when drunk. Since the settlement of missionaries in this district a closer examination has resulted in the discovery of thermal springs also. A mound of calcareous tufa, several feet in height, has been gradually formed by the chalky sediment around one of these springs; but this mound can no longer increase in height, because the resident missionary has tapped it in order to lead the water to a bathing-shed near to his house. One or two other bath-houses have been built near this by the Queen's order. A qualitative analysis I made of water from four springs in different parts of this district showed the presence of calcium, magnesium, sodium, potassium, chlorine, iodine, sulphates, carbonates, and free carbonic acid gas; in temperature, according to a Norwegian missionary, they range from 105° to 110° F.; and as regards the quantity of solids left on evaporating twenty ounces of water from each spring, they gave a result of twenty-eight, thirty-eight, forty, and forty-two grains respectively. An analysis of a spring at the spot would somewhat alter these results, perhaps, as much carbonic acid gas must have been lost by escaping through the cork, as well as by unskilful bottling. The waters of these springs are now being freely used (with good results) by the European doctors in Imerina for cases of gout, rheumatism, syphilitic affections (extremely common in Madagascar), uric acid diathesis, and some other affections; cases of syphilitic paralysis most especially are benefited by the use of these waters.

CLASS 4. *Iodo-bromated.*—The Antsirabè springs just mentioned are the only waters of this class as yet known to exist in Madagascar. The constitution of them all is very similar, and they are particularly valuable for the iodine which they contain in an easily appreciable quantity; but they do not contain bromine, so far as the means of analysis at my disposal could show.

CLASS 5. *Muriated lithia waters.*—I do not know of any springs of this class in Madagascar. Besides the above-mentioned springs, which are sufficiently known to be classifiable, I have heard of other thermal springs. On my return to England I brought with me two bottles of water (temperature unknown) for analysis, one being taken from a hot spring in the forest, near the town of Ambòhimànga (the capital of the forest tribe called "Tanàla"), this bottle unfortunately burst on its way to England; the other from a hot spring on the western border of the province of Imerina. Mr. Hailes, of the Pharmaceutical Society, has kindly analysed the water contained in the second bottle, and his statement is as follows:—"The result of my qualitative analysis tends to prove that the sample is a perfectly normal one, that it contains nothing more than an ordinary spring water would. There is a trace of organic matter, which, however, may be due to the bottle being badly corked. The mineral constituents, which amount to only 27·80 grains per gallon, consist of silica, magnesia, iron, alumina, and chlorine, in small quantities, and lime and sulphuric acid to a somewhat larger extent. The water is absolutely free from carbonates, nitrates, sulphides, sulphites, phosphates, and borates. Owing to the small quantity, I have been unable to push the inquiry as far as I should like."

In connexion with these hot springs in the west of Imerina, I have heard (from a good authority) that many years ago a number of Malagasy, including high officials of the Hava Government, made a pilgrimage to these springs, but, as they never thought of building bath-houses and tanks, their only resource was to sit on low seats with their feet in the hot mud for hours at a time. One of these pilgrims was a young officer, now healthy and strong, then a lad afflicted with paraplegia (syphilitic?), who was put through a course of hot baths by the following simple process: After being stripped, two men took him by the wrists and ankles and dipped him, bathing-woman fashion, into the hot mud.

If the spring water analysed by Mr. Hailes cannot be accredited with these cures, some more alkaline, perhaps iodo-bromated, springs may be discovered at some future time in their neighbourhood.

[1] All travelling in Madagascar being on foot, a "day's journey" averages from twenty-five to thirty miles, rarely more.

NOTES ON SOME OF THE HOSPITALS IN THE CITY OF NEW YORK.

(From a Correspondent.)

DURING the last few years several entirely new hospitals have been erected here, in most of which the leading principles obtaining in hospital construction during later years have been carefully observed, while in the larger and more recent structures there are evidences of rivalry, on points partly experimental, which is as useful as it is commendable.

The Segregation Plan.—This principle in a general way prevails in each, so far as the wings are concerned, but in a manner particularly complete has it been carried out in some of them in the case of one or more surgical wards. Even Bellevue, the oldest of the hospitals, never to be outdone in enterprise, has erected in the garden a one-storey ward for surgical patients, and called the Sturges' Pavilion, and a very pretty ward it is. One feature in it it would be well to notice is the entire absence not only of curtains of any kind but of beds and mattresses. For both of these the substitute is a single sheet of wire matting. This is so well stretched by the four iron bed-posts as not to unduly dip, while the texture of the matting is such that when covered with a double blanket its firmness is not less than its softness. In this ward are two admirable English open fireplaces; their respective chimneys are built, however, so as exactly to obstruct the traffic and view in the middle of the central and only aisle. At one end of this building are

single wards intended for the segregation especially of puerperal patients. This pavilion is beyond the main hospital out in the garden, having a separate kitchen, ridge ventilation, and every special appliance to secure sanicæmic conditions. Strange to say, however, I found at the time of my visit not one patient in it, and this for a reason much stranger still,—septicæmia had occurred in it to such an extent that it had been necessary for some time past to discontinue the use of the ward altogether. A pavilion ward, which in every particular is as a surgical ward unequalled in New York, and unsurpassed anywhere, is to be found at the Roosevelt Hospital. This also is of one storey, and in height, width, light, and decoration is perfection. Though completely removed from the main building so far as necessities of excommunication can require, the central kitchens, laundry, heating shafts, and ventilating shafts of the entire establishment are in direct communication with it; all the benefits with none of the evils of a large and well-appointed hospital are thus secured in this ward in an exceptional degree. In the ventilation of this ward one point upon which I have always insisted is carried out. While in summer it can be made direct and intermediate by window and by double ridge, in winter all the fresh air is warm air, yet pure, the exit being by aspiration through a superheated shaft. This principle applied to each basin in the waterclosets secures an absence of odour it would be difficult to surpass. At the Woman's Hospital alone, however, have wards been erected as in Boston, with the express purpose of being burnt down or otherwise completely destroyed within a limited period. In the garden of this hospital there have been erected, some distance apart, several two-roomed wooden cottages. One room is the kitchen, the other an operating and bed-room. In these cottages exclusively the ovariotomies of this hospital are performed. Each cottage is occupied by one patient only at a time, and she stays undisturbed in the room where she was operated upon until it is unquestionably safe and expedient for her to be transferred to a general ward. On the slightest suspicion of contamination of one of these cottages it can be burnt without any loss to be mentioned, or it can be wheeled away intact, and be sold at half its cost for other uses. These truly cottage hospitals, and they alone, amongst public institutions, secure a segregation which is absolute. They imply, of course, special nurses and other extra expenses, which, if the principle be groundless, are unwarrantable. If, however, but in a fractional part the principle be correct, he would be a most unchristian economist who should denounce the extra cost per life as extravagance or waste.

A Hospital Solarium.—As yet to the New York Hospital alone, of all the other hospitals in this city, and I believe in this country, belongs the credit of this bright redeeming feature in the always sad and depressing life of the hospital patient. This hospital has not only set the first example of having all its cooking and laundry work done at the top of the house; but beyond all sight, sound, or smell of anything disagreeable it has utilised a part of its roof as a solarium. This solarium, which is directly accessible by the lifts, is a large greenhouse, which combines the further attractions of an aquarium, herbarium, aviary, museum, art gallery, library, reading room, and drawing room. In accordance with the prime objects in its construction, it secures, all day long, all the sunshine the sun pleases to give, minus the external cold; in summer all the breeze which only such an elevation can receive, while at all times the bay, the harbour, the Hudson river, and the mountains beyond present at one view a scene most bright, varied, and exhilarating. The Bigelow post-mortem table is another point in this hospital not unworthy of notice. This table, like most others of its class, dips towards a centre grating, but by elaborate arrangements beneath this grating and within its central and single leg, are found not only provision for drainage, but for ventilation. On the principle of aspiration, a continual air current downwards through the table leg is said to be obtained of sufficient volume and force to carry away without all offensive emanation during autopsies. I have had no opportunity of personally observing its efficacy, but with this and with the original table of my friend, Dr. Bigelow, in Boston, considerable satisfaction is expressed. For convenience for the operator and thoroughness of drainage, a rim at its edge, and convergent groovings of its surface, after the manner of the corresponding table in the Allgemeine Krankenhaus in Vienna, would seem to me not undesirable. This New York hospital is exactly the antithesis in architectural design of the new handsome wide-spreading hospital at Chicago. Here in this bijou establishment can be seen in fewer minutes than in any other I know a larger number of the best points in modern hospital construction.

The Manhattan Eye and Ear Hospital is a crowning monument to its originator, Dr. C. R. Agnew, and to his present colleagues. It is situated in a neighbourhood as fashionable as is that of St. George's in London, and in the descriptive account is announced the very sensible, but very un-American, fact that in addition to all the usual appliances for heating and ventilation nearly every ward and room has a fireplace in it, in which particular this hospital is different from and beyond any other I know of in this city.

Correspondence.

"Audi alteram partem."

THE "EIRA" ARCTIC EXPEDITION.

To the Editor of THE LANCET.

SIR,—It has been suggested by Dr. Buzzard and others that it would be interesting to know what kind of vegetables were saved from the *Eira*, and in what manner they were preserved and cooked.

1st. *Potatoes.*—Of these we had 150 tins, each containing 6 lb. of whole potatoes, which had been peeled, then half boiled and put into tins; these potatoes were cut up in small pieces and boiled with the meat for three or four hours. Messrs. Ritchie and Co., of Peterhead, had preserved them by Mr. Leigh-Smith's special instructions.

2nd. *Carrots.*—Also preserved in 6 lb. tins, and partly boiled. We used them in the same manner as the potatoes, and saved about 180 tins.

3rd. *Edward's Dried Potatoes.*—Of these we had about 150 lb. We used them twice a week, putting, as a rule, 2 lb. into the dinner pot. These thickened the soup wonderfully.

4th. *Dutch Vegetables.*—Of these I cannot speak too highly. We, unfortunately, only saved thirty tins, containing about 10 lb. in each; some were potatoes and carrots, others potatoes and beans, others potatoes and peas. The Dutch preserve every kind of vegetable in these long tins, always mixing a good quantity of fat with them.

5th.—We had several small 1 lb. tins of peas, beans, turnips, macedoine of vegetables, &c., which were used occasionally when a little extra was wanted to celebrate any special occasion.—I am, Sir, yours truly,

W. H. NEALE, M.B., B.S.

Boundary-road, South Hampstead, N.W.

SCURVY.

To the Editor of THE LANCET.

SIR,—I was struck by two independent observations which occurred in your columns last week with regard to the etiology of scurvy, both tending to controvert the generally received opinion that the exclusive cause of that disease is the prolonged and complete withdrawal of succulent vegetables from the dietary of those affected.

Thus Mr. Neale, of the *Eira* Arctic Expedition, says: "I do not think that spirit or lime-juice is of much use as an anti-scorbutic; for if you live on the flesh of the country, even, I believe, without vegetables, you will run very little risk of scurvy." Dr. Lucas writes: "In the case of the semi-savage hill tribes of Afghanistan and Beluchistan their food contains a large amount of meat, and is altogether devoid of vegetables. The singular immunity from scurvy of these races has struck me as a remarkable physiological circumstance, which should make us pause before accepting the vegetable doctrine in relation to scurvy." These observations do not stand alone. Arctic voyagers have long pointed out the antiscorbutic properties of fresh meat, and Baron Larrey, with regard to hot climates, arrived at the same conclusion in the Egyptian expedition under Bonaparte, at the end of last century.

The question now arises, How is it that tropical and arctic experience is at variance with that acquired in Europe? The only explanation that occurs to me is the different circumstances under which the meat is eaten. As is well known, the reaction of freshly killed meat is alkaline,

from the presence of neutral sodium phosphate; after rigor mortis has passed off it gradually becomes acid, owing to the formation of lactic acid, which converts the neutral into acid sodium phosphate, thus:—

Neutral Sodium Phosphate.		Lactic Acid.
HNa_2PO_4	+	$C_3H_6O_3$ =
Acid Sodium Phosphate.		**Sodium Lactate.**
H_2NaPO_4	+	$NaC_3H_5O_3$

Now, in hot climates meat has to be eaten so freshly killed that no time is allowed for the development of the lactic acid; in arctic regions the freezing arrests its formation. The muscle plasma therefore remains alkaline. In Europe meat is invariably hung, lactic acid is developed freely, and the muscle plasma is consequently acid. If therefore scurvy is, as I have endeavoured to show ("Inquiry into General Pathology of Scurvy"), due to diminished alkalinity of the blood, it can be easily understood that meat may be anti-scorbutic when fresh killed or frozen immediately after killing, but which may become scorbutic when these alkaline salts have been converted into acid ones by lactic acid decomposition.

In conclusion, Mr. Neale is to be congratulated on his valuable and practical suggestion as to the use of the blood of the animals killed for food as a prophylactic in scurvy. The blood being so rich in alkaline salts no better natural antiscorbutic can be employed, if the view be accepted that scurvy depends upon a diminished alkalinity of that fluid.

I am, Sir, yours truly,
CHARLES HENRY RALFE.

Queen Anne-street, Aug. 28th, 1882.

THE "RESPIRATOR" IN SYPHILIS.

To the Editor of THE LANCET.

SIR,—The treatment of syphilitic ulcers of the tongue, mouth, and fauces by respiration of iodine and carbolic acid, &c., has proved so successful in numerous instances which have come under my notice of late, that I am desirous of giving it publicity in your columns. For the past two years this form of syphilis has been peculiarly prevalent in this Command, and as usual proved so tedious of cure, and so liable to recur under the ordinary treatment, constitutional and local, generally adopted, that I decided this year to test the efficacy of the "respirator," and I was gratified to find that the results, in all instances, were most satisfactory. The period of trial is as yet too brief to furnish reliable evidence of the constitutional and permanent effects of this treatment; but certain it is that locally its action is most prompt and palpable, all ulcers assuming a healthy appearance generally in forty-eight hours, and wholly disappearing in ten or twelve days. Immediate relief is also afforded from any panic or discomfort previously caused by the disease. After free purgation the only treatment needed is the use of the "respirator" for four hours daily, two morning and evening, after breakfast and tea. The solution I generally use is Coghill's combination of iodine, carbolic acid, and creasote, and I prefer oakum as the material for its retention. The form of "respirator" I have adopted is one I have devised myself, and is furnished with a detachable perforated diaphragm, which admits of its being thoroughly cleansed and purified for use in different cases.

I am, Sir, yours, &c.,
W. S. OLIVER, M.D., Surgeon-Major.

Halifax, N.S., August 10th, 1882.

P.S.—In 1875 I suggested that this method of the administration of medicinal antiseptic agents should be applied to the treatment of cholera, instead of endeavouring to affect the system through the deranged gastro-intestinal channel, and I still feel strongly impressed that if tried it will be found one of the most efficient means at our disposal of administering medicine in this disease.

CUPAR FIFE.

To the Editor of THE LANCET.

SIR,—My attention has been called to a paragraph in your Scottish Notes of last week in which it is stated that Cupar is afflicted with an epidemic of typhoid fever. That is not the case; but we have an epidemic of scarlatina. Perhaps you will kindly correct this, and oblige, yours truly,

WILLIAM WHITELAW, M.D.,
August 23rd, 1882. Medical Officer of Health, Cupar Fife.

SCOTTISH NOTES.

(From our Correspondent.)

DR. PIRRIE, the venerable Professor of Surgery at Aberdeen, has resigned his chair on the ground of advanced years and declining health. At the meeting of the University Court held last week permission was given, and, after the members had individually expressed their high sense of the distinguished services of Dr. Pirrie, it was agreed to recommend that an increase of the usual retiring allowance should be granted. Dr. Pirrie has served the University in the capacity of Professor for the long period of fifty-two years; for nine years as Lecturer on Anatomy and Physiology, and since then in the now vacated chair. Notwithstanding this long record of work, it is questionable if the duties of his chair have ever been more efficiently performed than during the past few sessions; the unfortunate illness which is the immediate cause of retirement having developed itself since April last. The fine form, the ever vivacious countenance, the sympathy, and the enthusiasm of the Professor will be missed by succeeding generations of students at Aberdeen, except as an ever-living tradition; while the place of one of the most impressive lecturers who ever addressed an audience of students will be difficult, if not at present impossible, to fill. After a double course of surgery under Dr. Pirrie, the man who did not know his subject well was an incorrigible dunce or careless idler. Even his most conspicuous fault, repetition through the want of manuscript, was helpful. We may well hope that, as he is now relieved of the duties of the chair, he may be long spared to benefit the profession and the public in his extended sphere of consulting practice.

There is as yet no certainty as to the candidates for the vacancy in Aberdeen. Locally, of course, Dr. Alex. Ogston's name is prominent in the matter, and much sympathy is felt for him in the illness which has necessitated his absence from home at the present juncture. I am not at liberty to say more than that another distinguished investigator and practical surgeon, who has also considerable experience as a teacher, may soon appear as a candidate. Many of the chairs in Scotland have within the past few years been filled by the appointment of men eminent enough as scientific pleaders who have not distinguished themselves in the lecture-room or as practical teachers, and in this case I sincerely trust that the eminent teacher now retired may have as a successor one who has the necessary aptitude for exposition. The patronage is in the hands of the Crown.

Dr. Whitelaw, in dealing with an epidemic of scarlet fever at present co-existent with that of typhoid at Cupar, adopts a simple method, which may with advantage be copied by other authorities. The Sanitary Committee did not deem it necessary that the schools should be closed, but that parents should be advised not to send children to school if any member of the family were affected. It is well known that this recommendation is often a dead letter, and Dr. Whitelaw has now had lists of the affected houses forwarded to the authorities of each school, while parents are warned that should they persist in endangering others by sending to school those children who have been exposed to the infection, they are liable to punishment under the Public Health Act. It is also considered of importance that parents on the list should not send their children to school until they have obtained a medical certificate that there is no risk involved. Ten out of forty-two cases of scarlet fever have proved fatal: a decidedly heavy mortality. The epidemic is abating.

At the advanced age of eighty-five years Aberdeen has lost her oldest practitioner, and one known to several generations of medical students. Though holding many appointments, it is as dispensing physician that Dr. John Paterson will be best known. For a period of years, differently defined even by himself, but reaching far back, he held office at the General Dispensary, and students delighted to spend an hour with him more on account of his genial and facetious style, both to pupils and patients, than from respect for his diagnostic powers. Belonging absolutely and unchangeably to the old school, his diagnosis of the fevers, of pneumonia, or of incipient phthisis was somewhat mixed, but in his superintendence of midwifery cases he was a safe and instructive guide. During his earlier years he did good work in epidemics of cholera and other diseases affecting the

poor, and till the last he was emphatically the poor man's friend. Aberdeen graduates, wherever found, will have pleasant recollections of Dr. Paterson.

At a meeting of the Council of the Dundee University College held last week, Mr. W. Petersen, M.A.Ed., B.A.Oxon., and late scholar of Corpus Christi, was appointed Principal of the College. The various professors will shortly be selected, and work may be expected to commence forthwith. The Council hope to make such arrangement, either with St. Andrews or other university, as will allow of students proceeding to their degrees in the various faculties; but at first the teaching will be confined to science subjects and those necessary in the Arts course. Many are sanguine enough to believe that through this college, favourably situated as it is for practical work, the medical teaching in St. Andrews may ultimately be placed on a footing of equality with the other Scotch Universities, and it is just possible that the science and medical work might be done entirely in Dundee. The newly appointed professor at St. Andrews has a good field for his energies here, and I have reason to think he is not averse to such advantages as combination affords.

Two of the ruffians who recently decoyed and attacked Dr. Whitelaw of Kirkintilloch were brought before Lord Mure at the Stirling Circuit Court, and on Monday were sentenced to penal servitude—the man for eight, and the woman for five years.

IRELAND.

(From our own Correspondent.)

THE Chair of Natural History in the Queen's College, Cork, is now vacant in consequence of the death of Professor Leith Adams. The appointment is in the hands of His Excellency the Lord-Lieutenant, and the candidate selected will enter upon his duties about the middle of October.

A Belfast paper states that the Government are contemplating the abolition of the Queen's Colleges in Ireland, and that inquiries are being made as to whether the several professors will be willing to compound for a fixed sum, should the institutions to which they belong be closed. I believe the statement to be entirely unfounded, and probably only due to the wish of that section of the Irish people who have always regarded the Queen's Colleges in Ireland with ill-concealed hostility.

The first Matriculation Examination of the Royal University of Ireland was held last December, when 728 candidates sent in their names, but only 614 came forward for examination, and of these 506 were successful. A second matriculation examination takes place this month, and about 600 candidates are expected to present themselves. There has been a fee of £1 charged for the first university examination in medicine of the new University, but as no charge was made for a similar examination in the Queen's University, a legal opinion was obtained, and I believe I am correct in stating that those students of the Queen's University who paid this fee will have the amount refunded. There has been as yet no allocation of the Medical Fellowships, if we except those for chemistry.

Dr. John MacMunn, late resident medical superintendent of Sligo District Lunatic Asylum, who died last April, has left a sum of £200 to the Royal Medical Benevolent Fund Society of Ireland, and £1000 divided among several Irish medical charities.

The outbreak of small-pox in Clonmel is abating, as only one case of the disease was admitted to hospital during last week.

In the case of Hynes, hanged at Cork last week for murder, Dr. Moriarty, the medical officer of the prison, who witnessed the execution, stated that the heart did not cease to beat for thirteen minutes after the drop fell, and that the pulse in the right hand did not cease for five minutes. The neck was dislocated between the fourth and fifth cervical vertebræ, and the spinal cord ruptured.

Dr. MacCabe, Local Government Board Inspector, in his recent half-yearly report on the condition of the South Dublin Union, remarks, that although the workhouse has recently been somewhat relieved of overcrowding in the female infirm department by the transfer of nearly 200 women of this class to Kilmainham sheds, yet he looks forward with great apprehension to the pressure which appears likely to be made upon the accommodation of the workhouse during the approaching winter. Even at midsummer the workhouse is very full, the male able-bodied department unduly so, and the female able-bodied wards overcrowded. The hospital departments he considers satisfactory, and a desirable improvement has been effected in the reduction in the use of stimulants. Considering the liberal dietary in vogue at this workhouse, the sum total for stimulants appears most startling.

NEW YORK.

(From our Correspondent.)

THE HOSPITAL SUNDAY MOVEMENT.

THE last number of THE LANCET to arrive here contains your editorial remarks on the result of your Hospital Sunday collection. It may therefore be an appropriate moment for me to offer your readers a *résumé* of what has been done in regard to this movement in the United States. I presume the movement must have had long precedence in England, for the first attempt at such an organisation was made in New York in the autumn of 1874, when the Board of Managers of St. Luke's Hospital issued an appeal to the various episcopal churches of New York City for a collection on behalf of their own work, to be made on the last Sunday of the year. This appeal was so favourably received, that from that time to the present the collection has been regularly made.

The friendly interest manifested by the press in this collection, and the reported success of the General Hospital Sunday movement in Liverpool and London, caused the managers of St. Luke's Hospital to believe that the cause of general charity to the sick would be promoted by an appeal to all classes of citizens, in behalf of all the charitable hospitals in the city; and on the 25th of November, 1878, a paper was read by the Rev. George Stuart Baker, the Superintendent of St. Luke's Hospital, before the Board of Managers, in which a scheme for such a general collection was elaborated, and afterwards put in practice. The result, so far, has been as follows—viz.:—

Total collection for 1879.....		$26,455 07
,,	,, 1880.....	44,371 97
,,	,, 1881.....	42,535 45

This amount has to be credited to New York City alone, as Brooklyn and the adjoining cities did not participate in the movement.

An examination of the amounts contributed by the various denominations shows in striking contrast the manner in which each creed sympathised in the movement. The Roman Catholic Church, the richest religious organisation in New York, contributed nothing. The Episcopal Church headed the list last year with $17,768; the Presbyterians next with $2521; then the Hebrews with $1368; and the Dutch Reformed with $1071. The powerful organisation of the Baptists gave only $299, and the Methodists must have ignored the movement, giving only $157.

The total amount last year was divided between twenty-one city hospitals. The New York Hospital, the Roosevelt Hospital, and the Nursery and Child's Hospital waived their claim to a share; the first two being wealthy corporations, and the latter not requiring aid to accomplish their work.

Last year a four-page pamphlet was prepared, presenting in a tabulated statement the work done at all the hospitals, giving their total receipts and expenses, and the number of patients treated free of charge; also a variety of interesting and important statistics, most useful for distribution before the collection, showing the actual financial condition of the hospitals and their need of public support. If I extract one item, it will show the value of such a report: "The actual number of days of hospital care of adult patients entirely free in the seventeen hospitals during the year was 248,680. These, at the average cost of $1 15 per day, show $285,982 expended in the free care of the sick. Of this sum, only $88,735 was received by these hospitals as income from their invested funds, and they were dependent for the balance on benevolent contributions and appropriations made by the Government of the city."

Last year a Hospital Saturday was organised, being the

last Saturday in the year, the day previous to Hospital Sunday. Your London rules for Hospital Saturday could not be applied here, so an attempt has been made to reach the general public by means of trades and various business pursuits, such auxiliary associations having a common form of constitution and by-laws. This system is too new to be properly developed, but worked well from the start. These auxiliary trade associations have the right to claim a certain amount of medical relief in proportion to their contribution.

The press of New York City has contributed valuable aid to this movement by editorial and other notices, which have placed the object of the Association prominently before the public. The distribution of 50,000 of the printed statements I have referred to is believed to have done much to increase the fund, presenting such an array of facts, in a form to be grasped without effort by the reader, that no one who reads it could fail to appreciate the force of the appeal.

I had a long talk to-day with the Rev. George S. Baker at St. Luke's Hospital, and feel pleasure in presenting here his suggestion that the Secretary of the Hospital Sunday Movement in London should put himself in communication with those who have enlisted their energies in the same direction on this side. Doubtless the same methods are not applicable for both countries, but a comparison of the working of the systems, and the various rules and regulations which each has adopted, cannot fail to lead to good results, and something may be learned each year by the other's experiences. Mr. Baker will reciprocate any courtesies which the London Secretary of the movement will extend; and will send copies of all printed matter issued by the Association. Mr. Baker says that he has received some of the printed documents of the London Society, but only at second hand, by the thoughtfulness of a friend, and not from the Society itself. Anything sent to me, addressed THE LANCET Post-office Box, 3230, New York, will be sent to the proper quarters; or the Rev. George S. Baker can be addressed at St. Luke's Hospital, West 54th Street, New York City.

I send by this mail to the office of THE LANCET, London, the following printed pamphlets, for the use of the secretary of the London movement, if deemed acceptable:—

1. Statement and Appeal of the Hospital Saturday and Sunday Association for the Year 1881.
2. History of the Hospital Saturday and Sunday Movement in New York City.
3. Report of the New York Hospital Saturday and Sunday Collection for 1880.
4. Report of the New York Hospital Saturday and Sunday Collection for 1881.
5. Constitution and By-laws of the Hospital Saturday and Sunday Association of New York City.
6. Constitution and By-laws of the Hospital Saturday and Sunday Auxiliary Associations, &c. &c.

It may be noticed that the movement has been thus far chiefly confined to New York City, the only exception I know of being the State of Maine, which has observed a Hospital Sunday since 1876. But the New York Executive Committee has addressed to the Mayors of twenty-three large cities a letter in the name of the Association, giving them a history of the movement, the result of the collections so far, and asking them to inaugurate similar movements in their respective localities. The replies received were very satisfactory, and steps have been already taken in some of these cities to follow the lead New York has set; and it is hoped that the Hospital Sunday movement may become a national institution.

In conclusion, I may state that the city government of New York City annually makes an appropriation of its funds for charitable institutions. Might not the rich corporations of London do something of this kind, sending on the 1st of January of each year a cheque for a stated amount to each of the London Hospitals requiring financial help?

August 14th, 1882.

A FINE incident is told of the first bearer company of the Army Hospital Corps in the late engagement at Kassassin. They were, during the recent engagement, by some movement of the troops, isolated. The medical officer in charge refused to allow the interruption in his duty of dressing the wounds which a change of position would have caused, and his forty men filled their haversacks with sand, so as to make a rough shelter, took the rifles of the wounded, and defended their charge until the arrival of the cavalry put an end to the enemy's attack.

Medical News.

APOTHECARIES' HALL. — The following gentlemen passed the examination in the Science and Practice of Medicine, and received certificates to practise, on Aug. 24th:—

Mayo, John, Kingsbridge, Devon.
White, Thomas Harry, Silver-street, Lincoln.
Wilson, Mervyn Seppings, Birchington-road, Kilburn.
Worthington, Sidney, Enfield, Middlesex.
Young, Charles Stewart, Royal Infirmary, Glasgow.

The following gentleman also on the same day passed the Primary Professional Examination:—

London, John E., King's College.

At the recent examination for the Prizes in Materia Medica and Pharmaceutical Chemistry given annually to medical students by the Society of Apothecaries, the successful candidates were—

1st.—John Barker Smith, St. Thomas's Hospital. Gold Medal.
2nd.—Thomas Henry Williams, Middlesex Hospital. Silver Medal and Books.

UNIVERSITY OF GLASGOW. — In the list published on Aug. 12th of gentlemen who passed the examination for the M.D. and C.M. degrees, the name "John Gopp" should have been printed John Goff.

VACCINATION GRANT.—Michael Whitmarsh, M.D., M.R.C.P., of Hounslow, has received the Government grant for efficient vaccination (fourth time).

AN aphthous disease, designated by the report "red thrush," is raging in an epidemic form at Malmö, Sweden. The mortality appears to be about 7·30 per cent.

THE Canterbury Board of Guardians are taking steps for the erection of a larger and more commodious infirmary than the one at present in use.

A HOUSE-TO-HOUSE collection was made on Saturday, August 19th, at Hastings, on behalf of the West Kent General and County Ophthalmic Hospital. The sum realised was about four guineas.

CRIMINAL LUNATICS.—In the year ending the 29th of September the number charged and detained as criminal lunatics in England and Wales was 827—656 males and 216 females.

A CORRESPONDENT of the "City Press" directs attention to the filthy state of Fleur-de-Lis Court, Fetter-lane. Complaints on the matter have, it appears, unavailingly been made to the City authorities.

AT the annual meeting of the governors of the Stratford-on-Avon Infirmary, held recently, the honorary physician, Dr. Kingsley, announced a donation of £6000 and a site for the proposed new building, the bequest of a gentleman whose name was not given.

THE committee of the North-west London Hospital for Sick Children are in treaty for the purchase of two nearly completed semi-detached houses in Bell-street, Edgware-road, for the purpose of converting them into a hospital for the treatment of children's diseases.

BY the will of the Marquis of Conyngham, lately deceased, it appears he has not forgotten his medical attendants, having bequeathed to "his friend," Mr. Edgecombe Venning, F.R.C.S., of Sloane-street, £200; and a like sum to his resident medical attendant, Mr. Robert Hippisley Cox, M.R.C.S. The will was sworn under £118,000.

AN inquest was held this week by Mr. Langham, at the board-room, Mount-street, Grosvenor-square, on the body of Mr. G. H. Ross, L.R.C.P.L., who died in the infirmary, to which he was removed in a comatose state. The post-mortem examination revealed the presence of compression of the brain due to fracture of the skull. A verdict of "Accidental death" was returned.

MARGATE SEA-BATHING INFIRMARY.—On Monday Sir Erasmus Wilson, at a meeting of the Governors of this Infirmary, handed over the key of the new wing of the building, to be named the Erasmus Wilson Wing, which has been built by him at an estimated cost of over £30,000. The wing includes two large day-rooms, and four dormitories, each to contain 16 beds, with a swimming-bath capable of containing 15,000 gallons of sea-water.

BOOKS ETC. RECEIVED.

CHURCHILL, J. & A., London.

On the Climate and Fevers of India: The Croonian Lectures delivered at the Royal College of Physicians, 1882. By Sir Joseph Fayrer, K.C.S.I. &c. pp. 278.

St. Thomas's Hospital Reports. New Series. Edited by Dr. Robert Cory and Mr. Francis Mason. pp. 419.

JOHNSTON, W. & A. K., Edinburgh.

The Botanical Atlas. By D. McAlpine, F.G.S. Part 5.

KEGAN PAUL, TRENCH, & Co., London.

The Concepts and Theories of Modern Physics. By J. B. Stallo. pp. 313.

LEWIS, H. K., London.

A Practical Treatise on Electro-Diagnosis in Diseases of the Nervous System. By A. Hughes Bennett, M.D. pp. 176, with Illustrations.

NATIONAL ASSOCIATION FOR THE PROMOTION OF SOCIAL SCIENCE, Adam-street, London.

A Manual for the Congress, with a Narrative of Past Labours and Results. By J. L. Clifford-Smith, Secretary. pp. 190, with Portraits.

NEW SYDENHAM SOCIETY, London.

A Treatise on the Diagnosis and Treatment of Diseases of the Chest. Part I.: Diseases of the Lung and Windpipe. By Wm. Stokes, M.D. &c. With Memoir by Dr. Acland. Edited for the New Sydenham Society by Alfred Hudson, M.D. pp. 596.

TREAT, E. B., New York.

The Illustrated Quarterly of Medicine and Surgery. Vol. I., No 3. Edited by Profs. G. H. Fox and F. R. Stargis.

VAN VOORST, J., London.

Questions in Pure Mathematics, proposed at the B.A. and B.Sc. Pass and Honours Examinations at the University of London. With Complete Solutions. By J. E. A. Steggall, M.A. pp. 245.

There is Dust in John's Eyes; by Joseph Allen, F.S.S.—Little Angels; by A. Pott.—Officieller Katalog f. die Allgemeine Deutsche Ausstellung aufs dem Gebiete der Hygiene, Gesundheitspflege u. Gesundheitstechnik u. des Rettungswesens; Berlin.—The Improved District Railway Map. (Adams & Sons, Fleet-street.)—Hereditary Syphilitic Eruptions of the Skin in Early Life; by James Startin.—Report of the Census of Berar, 1881; by E. J. Kitts, B.C.S.—New Commercial Plants and Drugs, No. 6; by Thos. Christy, F.L.S.—Statistical Tables of the Patients under Treatment in the Wards of St. Bartholomew's Hospital during 1881; by the Medical and Surgical Registrars.—Catalogue of Surgical and Physiological Instruments and Appliances, with Notes on New Remedies. (Brady & Martin, Newcastle-on-Tyne.)—Lock Hospitals and Lock Wards in General Hospitals; by F. W. Lowndes, M.R.C.S. (Churchills.)—Transactions of the Indiana State Medical Society, 1882.—Festschrift zur Feier des 300 Jährigen Bestehens der Julius-Maximilians Universität zu Würzburg.—Transactions of the Medical and Chirurgical Faculty of the State of Maryland, 1882.—Health Lectures for the People, Nos. 6 and 7.—John Weiss and Son's Price-list of Surgical Instruments &c., 1882.—Knowledge, August.—Animal Vaccination and the Origin of Vaccine; by C. R. Drysdale, M.D.—Index Medicus, Vol. IV., No. 7.—Remarks on Cattle Plague Vaccination; translated from the French of Dr. C. Pigeon.—On Croup, its Nature and Treatment; by John Meir, L.R.C.P. Ed.—Leisure Hour, Sunday at Home, Boy's Own Paper, Girl's Own Paper, Good Words, Sunday Magazine, for September.—De la Constitution Elémentaire des Tissus; par le Prof. A. Estor.

Medical Appointments.

Intimations for this column must be sent DIRECT *to the Office of* THE LANCET *before 9 o'clock on Thursday Morning at the latest.*

ALFORD, CHARLES EDWARD, M.R.C.S., L.S.A.Lond., has been appointed Medical Officer for the Misterton District of the Beaminster Union.

BEATTIE, JOSEPH ALOYSIUS, L.K.Q.C.P.I., L.R.C.S.I., has been appointed Government Health Officer for Port Jackson, N.S.W., vice Alleyne, resigned.

CLAYWORTH, CHARLES CREASY, L.R.C.P.Ed., M.R.C.S., has been appointed Resident Medical Officer at the Sydney Hospital, N.S.W.

COATES, WILLIAM, M.R.C.S., has been appointed Resident Accoucheur to the London Hospital, vice C. E. Jennings, resigned.

CORBIN, THOS. WILSON, M.R.C.S., L.S.A.Lond., has been appointed Visiting Medical Officer to the Home for Incurables, Adelaide, Australia.

CRESSWELL, NATHANIEL ENGELHEART, M.D. St. And., M.R.C.S., L.S.A.Lond., has been appointed Medical Officer for the Blisworth District of the Towcester Union.

HODGSON, G. G., M.R.C.S., has been appointed Medical Officer to H.M. Post Office, Liverpool, Bootle Division.

HOLLAND, JAMES CALLANAN, L.K.Q.C.P.I., L.F.P.S.Glas., has been appointed Medical Officer to the Dungarven Dispensary District of the Dungarven Union, vice Anthony, deceased.

LAING, R., L.R.C.P.Ed., M.R.C.S., has been appointed Medical Officer of Health for the Cowpen District, Blyth, Northumberland.

MACQUEEN, ARCHIBALD JOHN, F.R.C.S.Ed., L.R.C.P.Ed., has been appointed Government Medical Officer for the District of Forbes, N.S.W.

PEARCE, THOS. FRED., M.D.Brux., L.R.C.P.L., M.R.C.S., L.S.A.Lond., has been appointed Medical Officer for the Midland District of the Midhurst Union.

PENTLAND, ALEXANDER, M.B.Dub., L.R.C.S.I., has been appointed Medical Officer to the Casualty Hospital at Port Lincoln, South Australia.

SPENCER, WALTER, M.R.C.S., L.S.A.Lond., has been appointed Medical Officer for the Gringley District of the East Retford Union.

STEWART, DOUGLAS EDWARD, M.B., C.M.Ed., has been appointed Medical Officer to the Pentridge Stockade, Coburg, Victoria.

VISE, CHRISTOPHER, M.B., M.R.C.S., has been appointed House-Surgeon to the Infirmary, Tunbridge Wells, vice J. B. Footner, F.R.C.S.Eng., resigned.

WAINWRIGHT, CHARLES HENRY, M.R.C.S., has been appointed Medical Officer for the Howden District of the Auckland Union.

WRIGHT, ADAM HENRY, M.B.Toronto, M.R.C.S., has been appointed Physician to the Toronto General Hospital.

Births, Marriages, and Deaths.

BIRTHS.

BROKE-SMITH.—On the 27th ult., at Lipson-terrace, Plymouth, the wife of P. Broke-Smith, M.D., Brigade Surgeon, Army Medical Department, of a son.

DUNLOP.—On the 17th ult., at 50, David-place, St. Helier, Jersey, the wife of Andrew Dunlop, M.D., of a son.

GROSS.—On the 26th ult., at St. Saviour's Infirmary, Westmoreland-road, Walworth, the wife of Charles Gross, L.R.C.P.Lond., M.R.C.S.Eng., Medical Superintendent, of a daughter.

LORD.—On the 26th ult., at Wilton House, Landport-terrace, Southsea, the wife of Frederick Lord, L.R.C.P., L.R.C.S.Ed., of a son.

O'DONNELL.—On the 18th ult., at Darlington-street, Wigan, Lancashire, the wife of William O'Donnell, L.R.C.S.I. &c., of a daughter.

MARRIAGES.

BROOK—READ.—On the 31st ult., by license, at Holy Trinity Church, Stroud, by the Rev. Edward Hugh Hawkins, B.A., Vicar, Miles Brook, Esq., of Shepley, Yorkshire, to Sidné Sara Symington Scriven Read, Matron of Stroud Hospital.

DRUMMOND—WILSON.—On the 24th ult., at Davenport, James Drummond, M.D., of South Shields, to Charlotte, elder daughter of the late William Wilson, of Wimborne Minster, Dorset.

FERGUSON—ROSTRON.—On the 23rd ult., at All Saints', Cheadle, Hulme, John Ferguson, Surgeon, of Stockport-road, Manchester, to Emily, second daughter of R. H. Rostron, of The Ramillies, Cheadle, Hulme.

JACKMAN—RADCLYFFE.—On the 28th ult., at St. Thomas's Church, Camden-square, William Thomas Jackman, M.R.C.S., L.S.A.Lond., of Coggeshall, Essex, and eldest son of Dr. Jackman, of Stoke Newington, to Edith, daughter of the late Edward Radclyffe, Esq., of Camden-street, and of Mrs. Radclyffe, of Rochester-square, Camden-road, N.W.

PURTON—JONES.—On the 23rd ult., at Christ Church, Linnet-lane, Liverpool, Astley Rafford, elder son of the late Astley Purton, M.D., of Alcester, Warwickshire, to Catherine Elizabeth, daughter of the late Anthony Jones, of Liverpool.

TWEEDY—MEREDITH.—On the 26th ult., at St. Peter's Church, Dublin, Henry Colpoys Tweedy, M.D., son of H. Tweedy, M.D., to Alice Maud, daughter of the late Capt. T. J. Meredith, of Cloonamahon, Collooney.

DEATHS.

BANNISTER.—On the 22nd ult., at Great Malvern, Alfred James Bannister, M.D., of Addison-terrace, Notting-hill, aged 48.

CORNEY.—On the 25th June, at Suva, Fiji, Orlando Pridham, the only and beloved child of Bolton Glanvill Corney, M.R.C.S.Eng., Government Medical Officer, Fiji, and of Evelyn, his wife. He died, to the grief of all who knew him, after three weeks' suffering, from sunstroke, aged 4 years and a half (nearly).

DOLTON.—On the 19th ult., at Lee-road, Blackheath, William Blucher Dolton, M.D., aged 68.

GARDNER.—On the 22nd ult., at Bungay, after three days' illness, James Gardner, M.R.C.S., L.S.A.Lond., M.R.C.P.Ed., aged 65.

MOREHEAD.—On the 24th ult., very suddenly, at Wilton Castle, Redcar, Yorkshire, Charles Morehead, M.D., F.R.C.P., C.I.E., late Bombay Medical Service, aged 75.

ROBERTSON.—On the 25th ult., at Albany-street, Edinburgh, William Robertson, M.D., F.R.S.E., in his 65th year.

TICEHURST.—On the 25th ult., at the house of his father-in-law, J. Head, High-street, Lewes, Surgeon-Major Ticehurst, late of the Bombay Army, aged 50.

N.B.—*A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

Notes, Short Comments, and Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Letters, whether intended for publication or private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

Lectures, original articles, and reports should be written on one side only of the paper.

We cannot prescribe, or recommend practitioners.

Local papers containing reports or news-paragraphs should be marked.

All communications relating to the editorial business of the journal must be addressed "To the Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

THE STUDENTS' NUMBER OF THE LANCET will be published on Saturday next, Sept. 9th. Those gentlemen holding official situations connected with Medical Institutions in the United Kingdom, who have not yet forwarded the necessary information to our Office for publication in that number, are earnestly requested to send it *without the delay of a single post*. It will be esteemed as a favour if the needed alterations be made on the slip forwarded from this Office, so that risk of error may be avoided in the course of perusing bulky prospectuses.

THE LAST THING IN INCUBATION.

M. TARNIER, the surgeon of the Maternity Hospital in Paris, struck by the great mortality among infants prematurely born and those which are very sickly after birth, has conceived the ingenious idea of constructing a box which is almost exactly similar to the incubators used for poultry. This box is divided into two compartments—the lower one being used as a reservoir for hot water, while the infant is placed in the upper one, which is well stuffed at the sides and fitted with a sliding glass cover. The temperature is maintained at 86 degrees Fahrenheit, and M. Tarnier has found that by keeping infants in the incubator for a period varying from two days to six weeks their vitality is enormously improved. He has made experiments upon five six-months children, six seven-months, and thirteen eight-months children, and he has only lost two of them, whereas, according to his statement, three-fourths of them would have died but for this adventitious aid to vitality.

M. M.—Registration is no longer necessary at the Royal College of Surgeons, the duty having been undertaken by the Registrar of the General Medical Council, Oxford-street, from whom all particulars may be obtained.

OUGHT DISEASED MEAT TO BE USED AS HUMAN FOOD?

To the Editor of THE LANCET.

SIR,—I wish, through the medium of your columns, to ask the opinion of medical officers of health on the following case.

A cow, which had been previously ailing, gives birth to a calf, and on the following day it is slaughtered, the meat dressed and brought into market. I am consulted as to the flesh being fit for human consumption, and finding on examination that it is soft and flabby and dark in colour, with an alkaline reaction to litmus paper, and taking into consideration that the cow had been under veterinary treatment for several days, had been killed so soon after parturition, and had had physic administered to it, I condemned the meat. Acting on my advice, the Board of Health instituted an action against the butcher, and the case is heard before the local magistrates, who, after a lengthy trial, find the meat not unfit for human food.

Was I justified in condemning the meat? The magistrates by their verdict say I was not, but, as this may be made a test case, I should like the opinion of any of my medical brethren who may feel interested in the matter and who may feel qualified to speak on the subject. I should perhaps mention that a practitioner from a neighbouring town gave evidence on the opposite side, and gave it strongly as his opinion that such meat should not be condemned. He had not seen the meat. I should like to know, seeing that all authorities on the subject were entirely disregarded, what are the circumstances under which meat ought to be condemned and destroyed as unfit for human food.

I am, Sir, yours truly,

August 20th, 1882. MEDICAL OFFICER OF HEALTH.

CHARGES FOR DEATH CERTIFICATES.

IN spite of "M.," a writer in the *Pall Mall Gazette*, we do not believe it is the rule of medical men practising among the poor to charge for death certificates. At any rate, it is a rule more honoured in the breach than in the observance. In the case which occasioned the coroner's reflections the practitioner was careful to explain that his charge was not for the certificate, but for attendance.

Association of Fellows.—An old correspondent thoroughly endorses the excellent suggestion made by Mr. Tweedy in his letter, published in THE LANCET last week, that the meeting should be held the day before, or, if more convenient, early on the day of the annual election of Fellows into the Council of the Royal College of Surgeons, and suggests either the Freemasons' Tavern or the Inns of Court Hotel as being convenient for the purpose.

THE INFECTIVE POWER OF DIPHTHERIA.

To the Editor of THE LANCET.

SIR,—I shall feel obliged by your answering the two following queries under their respective headings.

A. What is a safe period of quarantine after recovery from diphtheria? or, in other words, how long after apparent recovery from the disease can it be communicated? I have heard of an instance where it was said to have been communicated to another person two months after recovery.

B. Be so good as to state your opinion of the conduct of a medical man who, called in to see a case which he pronounces to be diphtheria, does not recommend the isolation of the patient, who is the youngest member of a family of twelve children, the eldest of whom is sixteen. I enclose my card. I am, Sir, yours faithfully,

August 23rd, 1882. X. Y. Z.

*** A. We are not aware of any sufficient data which warrant a decided opinion on this point. The poison of diphtheria probably clings longer to the infected room and house than to the infected person, and recorded instances tend to show that where a second attack had occurred as long as two months after recovery, the source of infection has been the infected premises rather than any infected individual. Under ordinary circumstances, when thorough disinfection of premises and clothing has been resorted to, the lapse of a fortnight after the disappearance of all local signs of disease may be regarded as a safe interval. Such local lesions as the secondary paralyses need, in all probability, not be taken into account.—B. The infectiousness of diphtheria by personal communication has been so abundantly proved, both by experiment and experience, that we can hardly conceive such circumstances as are referred to, unless the remaining members of the family have had a prior attack. And even then the risk is by no means unimportant, second attacks being far from unusual.—ED. L.

Metalloid.—No. The tendency of recent observation, both anatomical and clinical, is to establish a contrary view.

Mr. John McNaught.—We do not think that we have anything more to say on the subject of our correspondent's views.

Dr. Taylor's (Scarborough) communication is unavoidably held over.

COW'S MILK DURING THE PERIOD OF RUT.

To the Editor of THE LANCET.

SIR,—I can quite corroborate the statement of your correspondent, Dr. Alex. Napier, of Glasgow, respecting the effect of cow's milk during the period of rut, although I am unaware of any alteration in the composition of the milk during that period. On investigating the causes of some infantile diarrhœa lately, I found that in most cases the parents had been very particular in obtaining milk from one cow for their infants. Some of these children had the milk from the same cow, and these were attacked with diarrhœa at the same time, and that time corresponds to the period of rut in the cow. I have little doubt but that this was the cause of the diarrhœa in this instance, and on a previous occasion I noticed the same probable cause. I believe that this would be a much more frequent cause of illness than it is at present but for the fact that cowkeepers as a rule pay little attention to their customers' orders for milk from one cow. Whenever the opportunity has occurred I have advised parents not to give any such order, believing this to be a popular and injudicious error.—I am, Sir, yours, &c.,

EDWARD WALFORD,

August 20th, 1882. Medical Officer of Health, Ramsgate.

Mr. James Richards would oblige by obtaining for us further particulars, when the subject shall have attention.

Mr. William Thomson (South Yarra).—The matter has not been overlooked.

"BICYCLE (AND TRICYCLE) RIDING."

To the Editor of THE LANCET.

SIR,—The concluding sentence in Mr. Creswell's reply to "F.R.C.S." suggests to me to state that I am acquainted with persons afflicted with hernia who always dispense with their trusses when tricycle-riding. I know two bicyclists—racing men—who have had to give up riding on account of varicose veins. Both attribute their condition to bicycle-riding. Can they be mistaken?

I am, Sir, your obedient servant,

W. H. STACPOOLE WESTROPP, L.R.C.S.I., &c.

Lisdoonvarna, August 25th, 1882.

MEDICAL ADVERTISING AT TUNBRIDGE WELLS.

THE *Tunbridge Wells Gazette* advertises weekly the names of its staff and the number of its in- and out-patients. This seems to us superfluous, to say the least. If the committee of the charity thinks the advertisement of the work done helps the funds, well and good. But the weekly advertisement of the medical officers is a contravention of that spirit of quietness in which medical and benevolent work should be done.

Drachm.—The report of a case will appear in an early number of THE LANCET.

THE POSITIVE TREATMENT OF GONORRHŒA.

To the Editor of THE LANCET.

SIR,—As a regular reader of your valuable journal I am frequently forced to the conclusion that many of the theories advanced would never find ventilation had the writers themselves had any practical personal experience of the pain their ill-begotten remedies inflict upon the patients they unfortunately try their experimental treatment upon. On no one subject has this feeling intruded itself upon me in reading the various articles, letters, &c., more than on that of the so-termed "abortive treatment of gonorrhœa."

Of course it is very wicked to confess that ever I had such an ailment, but truth compels me to say that, after seeing much practice at the Manchester Lock Hospital, and having duly passed my M.R.C.S. examination and being actively engaged in practice, to my very great surprise one day I found myself (for the first time in my life) enjoying the promise of a smart attack of urethral inflammation. Now, whilst the prescribing of medicine for others and pocketing the reward of my industry (especially the latter) has constituted one of the chief enjoyments of my life during the last twenty years, I have to confess to an all but utter inability to swallow any of the nauseous compounds in which I daily dabble. You may fancy my exultant feelings in the prospect of having to face the stern reality of balsam, cubebs and co. Of course I immediately consulted the authorities (I think we always do this when matters so nearly come home), the result being that, all things considered, I came to the conclusion that the treatment recommended in "Druitt's Vade Mecum" was about the most sensible and practical treatment I could find, and one deserving honest trial. Of course, too, I was a bachelor, so had every opportunity of doing every justice to the two grains to the ounce of nitrate of silver injection, but as I sat for hours after its use nursing that weak solution, and the extreme and persistent pain it occasioned, and then shrieked out with agony when forced to micturate, I reluctantly was forced to the conclusion that Dr. Druitt never had this ailment, or, if he had, had certainly written his book before trying the remedy he recommended. Afterwards, when suffering from severe orchitis brought on by this injection, I "unanimously" came to the direct decision that he knew nothing at all about it. For two whole years I held courageously to a gleety discharge, set up entirely by this insane treatment; but eventually, to get rid of it at the cost of a persistently recurring irritability of the neck of the bladder (for which I hold this so-called "abortive treatment" entirely responsible), sulphate and chloride of zinc are all but equally painful, whilst such astringents as tannin, &c., in arresting too suddenly the discharge (which is but the product or result of the acute inflammation) are sure to be productive of as much harm as good. Now, as against this abortive treatment of this ailment I will tell your readers of a most positive cure for gonorrhœa, one at least which, based upon a large experience, I have never known to fail, and which possesses the advantage of being as palatable as most remedies which we are called upon to use in our every day experience of other ailments. Having, as I before asserted, a somewhat considerable practice in this direction, I get one pound of roughly ground cubebs (I grind my own, and so can rely upon its freshness); this I put into a 200 oz. or wide mouth bottle of commerce; to this I add 2 oz. of the iodide of potash, filling up my bottle with cold water, into the mouth of which I drop several large lumps of camphor, simply to make it keep. This I shake up two or three times a day for a few days, of course keeping it in a very cool place, afterwards pouring off the clear infusion, which I administer to my patients in regular consecutive doses.

If asked why I mix it in this wholesale fashion, I answer—for convenience, and that it may have an opportunity of macerating, and then settling. The spent cubebs I throw away. I add cold water in order that it may keep the longer, and prefer to give only the infusion, so as not to run the risk of choking my patients with drachm doses of the powder. If further questioned why I give them iodide of potash or what its curative advantages are, I honestly admit I cannot tell. All I know is that it neutralizes any acidity in the urine, and, from my experience, speedily kills the virus of the poison much more effectually than any other preparation of soda or potash does. In my experience all injections are mistakes; at least, if ever I use any at all, I never but employ an infusion of cubebs, to which I add one grain of morphia. This I direct to be used warm, and only to be passed a short distance down the passage of the urethra.

Perhaps there is nothing new in this treatment—very likely not. Cubebs is a remedy as ancient as the hills. The worst is that when given in the bulk it is readily recognised, and at the best is very unpalatable. Its infusion, however, is much more easily taken. It, with the potash, soon cured me, whilst in my hands it has cured all to whom I have administered it.

Trusting it may be found as effectual in the hands of others, with many apologies for the sad confessions I have had to make, permit me, Sir, to subscribe myself yours, &c.,

M.R.C.S. Eng.

August 29th, 1882.

CIVIC EXPENSES.

FROM the annual report of the receipts and expenditure of the City of London, which has just been published, it appears that the expense of the *conversazione* to the members of the International Medical Congress last year amounted to £3099. The sum of £2596 appears as the amount required for the sanitary expenses of the Port of London.

Mr. Alfred Wright.—The advertisement is a very unprofessional one, which would be difficult of justification. The author cannot expect professional recognition.

Mr. Sprint's attention is directed to a general notice in another column.

"THE MALE URETHRA."

To the Editor of THE LANCET.

SIR,—Not having observed in the numerous works on physiology any reasons assigned for the various diameters and directions of the male urethra, I venture to offer a few remarks on the subject.

Apart from nature's economy in regarding the penis as an organ of generation, I contend that the various dimensions and directions of the calibre of the male urethra serve a twofold purpose.

1. To offer as little resistance as possible to the flow of urine, and so reduce friction to a minimum.

2. To cause the flow of the fluid to be propelled from the extremity of the urethra with as much force and with as perfect a stream as possible as compared with the propelling power.

In order that these propositions may be fully appreciated, I can give no better proof than by referring observers to instances where patients have either had ill-developed urethras or a part has been removed through malignant disease, &c., for in such cases the patients have not had the slightest control in directing the stream during micturition, the fluid dribbling, as it were, in all directions, notwithstanding that the development and tone of the bladder have been natural, thus rendering the existence of the unfortunate sufferer perfectly miserable when he is called on for nature's relief.

As to the first proposition, if the calibre of the urethra were the same throughout, a considerable part of the force exerted by the muscular contraction of the bladder would be expended in overcoming the frictional resistance of the stream of urine offered by the entire area of the canal; but as the orifice in the membranous is smaller than that in the spongy portion, the urine flows through the latter without, comparatively speaking, any impediment, but in a somewhat irregular manner on account of the various eminences and depressions of the surface and the positions in which the spongy portion may be directed during micturition, so that the stream is again slightly contracted by the smaller calibre of the meatus, and this tends not only to correct the somewhat irregular stream, but also to increase its velocity. Perhaps it may not be out of place, in order to illustrate my meaning with regard to the last remark, to compare it with an ordinary garden hose. It may readily be seen that when water is allowed to flow from the hose without being constricted by the brass nozzle, it does so in a stream corresponding with the diameter of the hose, but has only a very slight velocity. If, however, the orifice of the hose be contracted, it flows with considerable velocity.

With regard to the second proposition, I am of opinion that the calibre being somewhat of an oval shape and changing its long diameter from the horizontal to the vertical direction, the course, precision, and force of the stream are regulated as in the rifling of a gun. This may be seen when the urine passes through a catheter, the stream changing its peculiar twist, so to speak, and corresponding in shape when issuing from the catheter with the bore of the tube.

I am, Sir, yours truly,

R. FITZROY BENHAM, M.R.C.S.

Baron's-court, S.W., August 19th, 1882.

SCARLATINA AND PUERPERAL FEVER.

To the Editor of THE LANCET.

SIR,—In response to Dr. SWORN's request, I send particulars of a case I attended some time ago, which somewhat corresponds with the one he reports.

I was sent for in great haste to a case of severe flooding, the patient being seven months pregnant with her eighth child. On my arrival I found the patient on the bed in a small room over a provision-shop, and in a crib by the side of her the body of a child recently dead of scarlatina. Not being able to get the child removed, and the patient continuing to lose large quantities of blood, I at once made an examination, and found it a case of complete placenta prævia; so without wasting any time, as the patient could not have stood further loss, I introduced my hand into the vagina, and having dilated the os sufficiently, swept the placenta clear from its attachment, seized the feet of the child, and delivered; then pressed off the placenta, gave a dose of extract of ergot and brandy, and left the patient with a firmly contracted uterus, and the child living. I returned shortly after and had the crib covered with disinfectants, as well as placing them about the room. I was not able to get the child removed for a day or two.

This case, considering the excessive hæmorrhage and the small, close room and dangerous surroundings, did fairly well, although the temperature rose as high as 103°. Liquid extract of ergot was administered during the first day or two after delivery, and subsequently decoction of cinchona and ammonia. I have since delivered the patient of a fine, healthy child at full term. The above is simply an outline of facts, opinions being omitted.—I am, Sir, yours &c.,

Appleby Magna, August 22nd, 1882. CHAS. S. RICHARDSON.

HEREDITARY LINEAMENTS.

It was Dr. Oliver Wendell Holmes to whom, as he was waiting for a prescription, the druggist said: "That is my son, sir, sitting by you; don't you think he looks like me?" "Well, yes," replied the poet, "I think I can see some of your liniments in his face."

An Old Member.—Complaint should at once be made to the secretary of the Royal College of Surgeons, as the Calendar is about to be sent to press, and on satisfactory proof the name and address will be restored.

MORBUS CORDIS.

To the Editor of THE LANCET.

SIR,—The following lines were composed this morning and written with his left hand by a patient in the Radcliffe Infirmary suffering from complete right hemiplegia, with occasional spasm in the left side of the face and the left arm. He is a ship's engineer, and has a face which reminds me of student days and old Keeley. As we have no lady-doctor in Oxford, the symptoms he describes must have been felt in the great metropolis.—I am, Sir, your obedient servant,

Oxford, August 26th, 1882. H. M. TUCKWELL.

TO A LADY DOCTOR.

(Complaint of patient, an affection of the heart.)

Yes, doctor, your physic I've taken,
That surely should conquer my ills;
The bottle was solemnly shaken,
I dote on those dear little pills.
I've followed your rules as to diet,
I don't know the taste of a tart;
But though I've kept carefully quiet,
The pain's at my heart.

Of course you've done good: convalescence
Seems dawning. And yet, it is true,
I fancy the light of your presence
Does more than your physic can do.
I'm well when you're here, but, believe me,
Each day when fate dooms us to part,
Come strangest sensations to grieve me—
That must be the heart.

Your knowledge is truly stupendous,
Each dainty prescription I see;
I read "Haustus statim sumendus,"
What wonder you took the M.D.!
I hang on each word that you utter
With sage Æsculapian art,
But feel in a terrible flutter,—
It comes from the heart.

Have you ever felt the emotion
That stethoscope ne'er could reveal?
If so, you'll perchance have a notion
Of all that I've felt, and still feel.
Oh say, could you ever endure me,
Dear doctor? You blush and you start!
There's only one thing that can cure me—
Take me—and my heart!

Staff Surgeon.—The salaries of the Directors-General of the Army and the Navy Medical Departments are put down at £1500 and £1300 per annum respectively. A Deputy Inspector-General in the Navy receives £720. The cost of naval medical establishments at home and abroad amounts to £68,445. The expense of carrying out the Contagious Diseases Act is £14,800 per annum, whereas in the Army it is only £6300.

PRECAUTIONS AGAINST DROWNING.

To the Editor of THE LANCET.

SIR,—Allow me to add a few remarks to your very useful suggestions on this subject in "Annotations" of the 19th ult. It is most important that everyone who enters the water should be able to float, and a knowledge of the art of swimming ought to be more general than it is. The "belts" which you describe would be admirable for timid bathers, but the most expert swimmers are in danger of drowning if they are ignorant of other precautions, the neglect of which is the cause of most of the bathing accidents that occur during the so-called "drowning season." A knowledge of the simple laws of physiology might avert many a fatality of the kind. The teaching of such simple rules bearing on the laws of life may be brought within the capacity of all school children; indeed, this branch of knowledge should be made a part of the educational course in all board and other schools.

A case occurred recently at a sea-bathing town on the South Coast, and I relate it as an instance of many similar cases, which, however, are not always so well investigated. A youth went into the sea to bathe. He suddenly sank, and the body could not be recovered till life was extinct. It was known that the lad had partaken of a meal just before going to bathe, and a post-mortem examination revealed the fact that the sudden immersion in the water while the stomach was full of food had acted upon a weak heart, and the collapse which had caused the body to sink would no doubt have been attributed as usual to cramp of the lower extremities if the true cause of the casualty had not been elicited by the evidence at the coroner's inquest.—I am, Sir, yours obediently,

August 21st, 1882. M. A. B.

AN EXTRAORDINARY CASE OF EARLY PUBERTY IN A BOY.

To the Editor of THE LANCET.

SIR,—The following case is, I think, worthy of being put on record:—W—— is now six years and seven months old, having been born on January 21st, 1876. A week or two ago I saw him whilst bathing, and was greatly surprised to see that his genital organs were as fully developed as in the adult, and his pubes covered with a thick crop of dark brown hair, presenting the appearance of a youth of seventeen or eighteen; hair is also commencing to grow on his upper lip. His height is about 4 ft. 9 in., and he is big and muscular in proportion, but I regret that I am unable to give his weight and chest measurement. His voice for more than a year has been gruff and hoarse as it usually is at puberty, and his grandmother tells me that he has had hair on the pubes since he was three years of age. He is so wild and mischievous that she has had to apply to the magistrates to have him sent to an industrial school, which they consented to do, and he has now been committed for five years. A few days ago he took away a tradesmen's cart, upset it on the roadside, cut the harness into pieces, and galloped the horse about till he was tired of the fun, and then let it go. His clothes were taken away from him, and he was put to bed to keep him from further mischief. He, however, managed to find his grandfather's best black trousers, cut off the bottoms so that they might fit him, and escaped through the window. One day recently he found some pigs straying, and drove them some miles to a butcher and tried to sell them; failing to do so, he gave them away to some one he met. It required three policemen to take him to the workhouse (to which he was sent until arrangements could be made for his removal to the industrial school), and when they had carried him there face downwards, as they were compelled to do, he smashed a bedstead into atoms, kicked the plaster off the walls, cursed and swore in a most fearful manner, and had to be removed to the police-station for safety. He was not a large baby at birth, but grew rapidly after twelve months. He commenced to cut his permanent teeth between four and five years of age. His father is in a lunatic asylum, suffering from melancholia. I have known the child since birth, and am perfectly certain of his age.

I am, Sir, yours truly,

Gillingham, August 24th, 1882. T. WOODS, L.R.C.P. Lond.

Dr. Macnab.—The terms of the bond being precise, the answer must be in the negative.

"THE CAUSE OR CAUSES OF ACUTE TONSILLITIS."

To the Editor of THE LANCET.

SIR,—As the cause of tonsillitis has so recently been under discussion allow me to add my quota, not as to the cause, but rather as an adjunct to the treatment. My reason for making it public is that, although I have told it to numbers of medical friends, not one ever heard of it. It is so simple and at the same time beneficial and useful in all diseases of the throat where there are difficulty and pain in swallowing, that I trust the profession will try it. The method is as follows:—Stand directly in front of the patient, and pull downward the lobes of the ears; then tell the patient to swallow: he will do this without pain. I cannot explain the theory. I will leave that to others more scientific. The fact I only state, and am so fully convinced of its beneficial application that I trust it will be an excuse for my trespassing upon your notice.

I am, Sir, yours truly,

Grantham, August 22nd, 1882. G. GREWCOCK, M.R.C.S., &c.

Sartorius.—The charges are quite reasonable. But clergymen need education in the payment of medical bills.

"A METHOD OF APPLYING LIGATURES TO VEINS."

To the Editor of THE LANCET.

SIR,—In Dr. H. Sydney's paper on the above, which appeared in THE LANCET on Saturday last, he demonstrates how he applies a "reef-knot." I have amused myself by placing a penholder under a cloth to represent a vein under the skin, and tried to produce the reef-knot as Dr. Sydney describes. Out of numerous efforts I succeeded in tying a reef-knot, but not to be repeated. Each was a granny or worse. It may be my awkwardness, but I would much like to hear from many of your readers whether the reef-knot can be "correctly and securely tied subcutaneously" under ocular demonstration. It would never do to attempt the operation if it was only a haphazard whether one tied the ligature with a reef-knot or a granny.

I remain, Sir, your obedient servant,

August 27th, 1882. F. A. P.

A Father will do well to consult a medical man on the question he puts to us. We do not give advice.

"SULPHIDE OF CALCIUM IN CANCER."

To the Editor of THE LANCET.

SIR,—In your last issue Dr. Barton relates three cases of cancer which, "after operation," he treated with sulphide of calcium. I notice that he has omitted the dates of the operations, and also the dates when he last saw the patients. He will see at once that this alone will not enable the profession to form any judgment in the matter, adverse or otherwise, as it is no uncommon thing for a cancer patient after operation to go on well for some time without any treatment at all. Ringer has shown the efficacy of sulphides in many ailments and diseases, but I have never met with the sulphides in cancer treatment.

I am, Sir, yours, &c.,

Belper, August 28th, 1882. EDWARD GAYLOR.

COTTAGE HOSPITALS.

DR. LUCIUS W. BAKER, of Baldwinsville, Massachusetts, in a paper read at a recent meeting of the local medical society, strongly advocates the establishment of cottage hospitals in different parts of that State. The New York *Medical Record* supports the suggestion, and remarks that in every State in the Union there is a great scarcity of hospital accommodation outside of the large cities.

COMMUNICATIONS not noticed in our present number will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Mr. Woods, Gillingham; Mr. Jas. Hall, Isle of Man; Dr. Whitelaw, Cupar, Fife; Dr. Leslie Jones, Blackpool; Mr. Lloyd, St. Albans; Dr. Tuckwell, Oxford; Dr. Adams, Dumfries; Dr. Kirchner, Wurzburg; Mr. Ashton Warner, London; Dr. Andrew Marshall, Preston; Mr. Moir, London; Mr. Corsellis, London; Mr. Walford, Ramsgate; Dr. Finlay, Navana; Dr. Norris, Birmingham; Mr. Meadows, Hastings; Mr. Hedgcock, London; Mr. Jennings, London; Dr. Fergusson, Peebles; Mr. Gaylor, Belper; Mr. McDougall, Blackheath; Mr. Westropp, Lisdoonvarna; Mr. Rushton Parker, Birmingham; Mr. Dunnett Spanton, Hanley; Dr. Thomson, South Yarra; Mr. Richards, Hastings; Mr. Walker, London; Mr. German, London; Dr. Taylor, Scarborough; Dr. Sloan, Glasgow; Mr. Croskery, Downpatrick; Dr. Macnaught, Greenock; Messrs. Brady and Martin, Newcastle-on-Tyne; Mr. Briscoe, London; Messrs. Couchman and Co., Bristol; Mrs. Ratton, London; Mr. Pike, Exeter; Mr. Worth, Colchester; Messrs. Evans and Co., Liverpool; Mr. Towers, Gloucester; Mr. Walker, Aberdeen; Mr. Smith, Chantry; Mr. Warman, Ramsgate; Mr. Garman, Wednesbury; Mr. Boscawn, Brighton; Dr. Thomas, Glasgow; Messrs. Christy and Co., London; Mr. Scott, Manchester; Mr. Philpot, London; Mr. Tothill, Colombo; Mr. Charlton, Brabourne; Mr. Granville Sharp, Hong Kong; Beta; M.D., Mile-end; J. A. M., Cadenabbia; F. A. P.; H. S.; Medical Officer of Health; &c., &c.

LETTERS, *each with enclosure*, are also acknowledged from—Mr. Evans, Festiniog; Mr. Edmunds, Chesterfield; Dr. Simpson, South Shields; Mr. Kinder, Leicester; Mr. Komm, Corsham; Mr. Reid, Canterbury; Dr. Slade King, Ilfracombe; Mr. Powell, Liverpool; Mrs. Pearson, Liverpool; Mr. Irving, Long Bennington; Mr. Unsworth, Liverpool; Dr. Spanton, Anerley; Mr. Willey, Birmingham; Messrs. Hodgson and Co., Peckham; Mrs. Bingham, Grimsby; Mr. Cox, Cirencester; Mr. Ormond, Bath; Mr. Tomson, Luton; Mr. Haines, Cannock; Mr. Hills, London; Mr. Grayham, Wigan; Mr. Morton, Sheffield; Mr. Barrett, Aberdeen; Messrs. Couchman and Son, Birmingham; Dr. O'Mullane, Nottingham; Mr. Lawson, Brighton; Mr. Sweeting, King's Lynn; Dr. Rayner, Hanwell; Mr. Evans, Liverpool; Dr. Pearce, Liverpool; Mrs. Beddingfield; Dr. Webster, Bristol; Mr. Swinson, Birmingham; Dr. Hern, Durham; A. B., Ollerton; Pil. Saponis. Co.; Amanuensis, Bristol; M.R.C.S.; H. B., Blackheath; Z. B.; M.D., Southsea; Medicus, Sheffield; Medicus, Normanton; L. T. V.; X.; J.; Doctor, Cannon-street; Sheffield; Student, Stoke Newington; C. B., Ryde; Kirwig; M. F., Northampton; Omega, Peterborough; Vitis, Faversham; Medicus, Lyme Regis; M.R.C.S.; W. T., Stepney; Forward, Stockwell; Claude, East Dulwich; Kappa; Stanbridge; Old Kent-road; P. P., Old Swindon; M. Z. Y., Bayswater; Adsum; Studens; Medicus, Columbia-road; X. Y. Z., Oakley-square; H. N. O.; M. C. S., Leicester; &c., &c.

Sydney Daily Telegraph, Perthshire Constitutional, Newcastle Daily Chronicle, Bath Herald, Houston (Texas) Daily Post, Morningside Mirror, New York Banker and Broker, Croydon Chronicle, Anti-Compulsory Vaccination Reporter, Coffee Public-house News, Wynberg Times, Nottingham Daily Guardian, Ross Gazette, Croydon Advertiser, &c., have been received.

METEOROLOGICAL READINGS.

(Taken daily at 5.30 a.m. by Steward's Instruments.)

THE LANCET OFFICE, August 31st, 1882.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Max. Temp. Shade.	Min. Temp	Rain fall.	Remarks at 8.30 A.M.
Aug. 25	29·53	S.W.	57	55	93	67	50	·14	Overcast
,, 26	29·48	N.W.	59	56	115	68	51	·13	Overcast
,, 27	29·74	W.	62	57	92	66	52	..	Cloudy
,, 28	29·75	W.	57	55	101	66	48	..	Cloudy
,, 29	29·41	W.	58	54	103	67	51	·03	Cloudy
,, 30	29·91	N.W.	59	54	103	69	51	·15	Cloudy
,, 31	30·08	W.	57	54	83	66	47	..	Hazy

Medical Diary for the ensuing Week.

Monday, Sept. 4.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, 10½ A.M. each day, and at the same hour.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1½ P.M. each day, and at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M
ST. MARK'S HOSPITAL.—Operations, 2 P.M.; on Tuesday, 9 A.M.

Tuesday, Sept. 5.

GUY'S HOSPITAL.—Operations, 1½ P.M., and on Friday at the same hour.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 3 P.M.

Wednesday, Sept. 6.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1½ P.M., and on Saturday at the same hour.
ST. MARY'S HOSPITAL.—Operations, 1½ P.M.
LONDON HOSPITAL.—Operations, 2 P.M., and on Thursday and Saturday at the same hour.
GREAT NORTHERN HOSPITAL.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2½ P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M., and on Saturday at the same hour.—Skin Department: 1.45 P.M., and on Saturday at 9.15 A.M.

Thursday, Sept. 7.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M.
ST. BARTHOLOMEW'S HOSPITAL.—1½ P.M. Surgical Consultations.
CHARING-CROSS HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and on Friday at the same hour.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M.
NORTH-WEST LONDON HOSPITAL.—Operations, 2½ P.M.

Friday, Sept. 8.

ST. GEORGE'S HOSPITAL.—Ophthalmic Operations, 1½ P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2 P.M.
ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.

Saturday, Sept. 9.

ROYAL FREE HOSPITAL.—Operations, 2 P.M

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Tables of Contents, with the Index of Advertisements, for each Number can be had on application to the Publisher.

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